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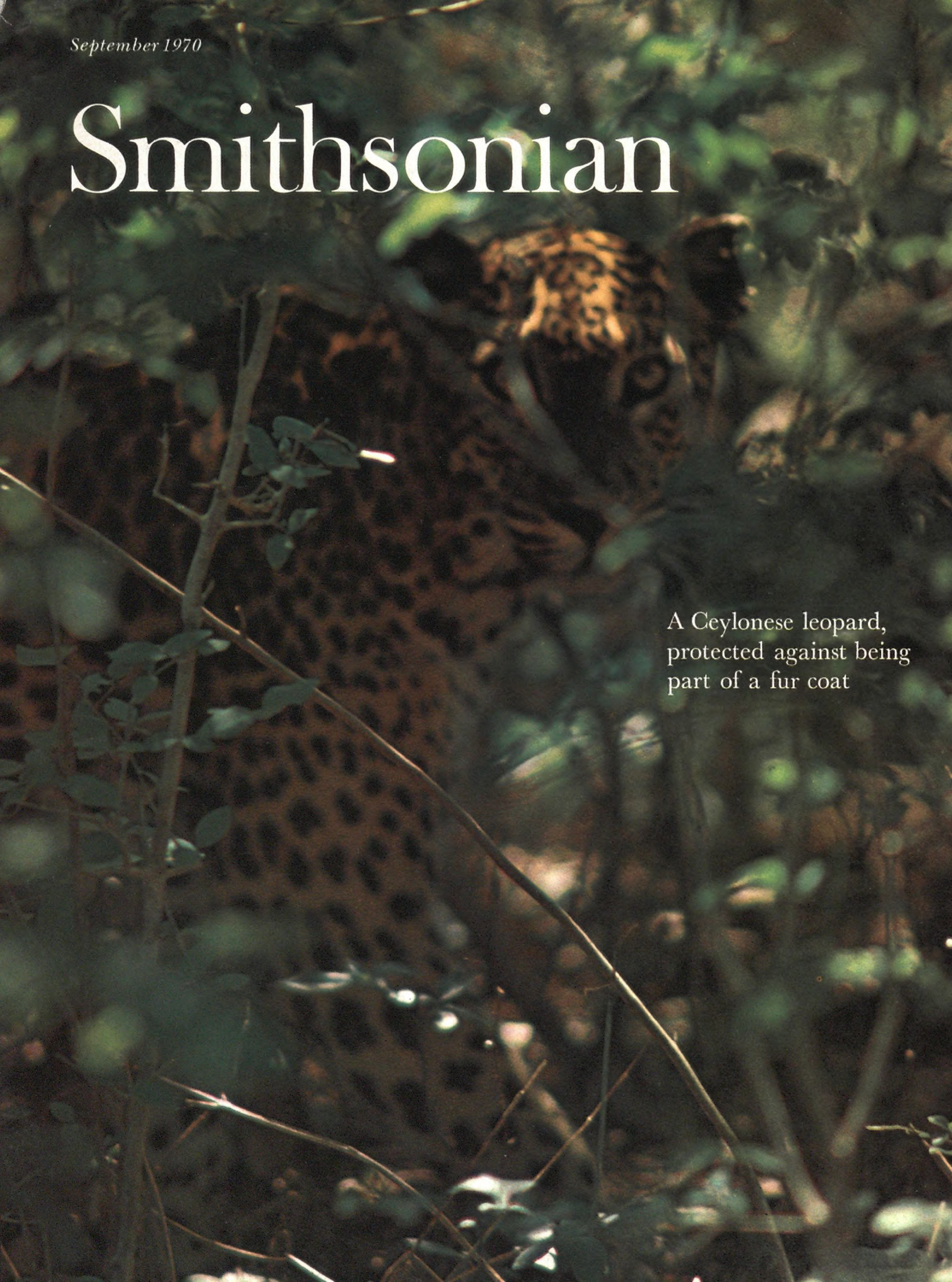
Smithsonian



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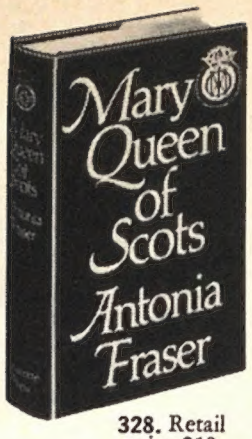

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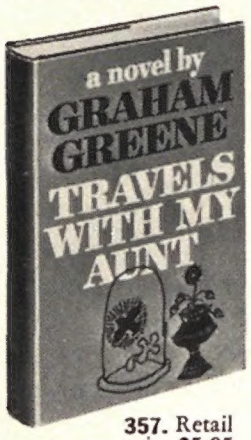

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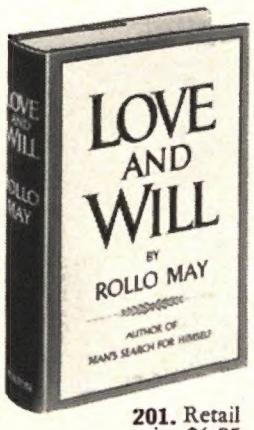

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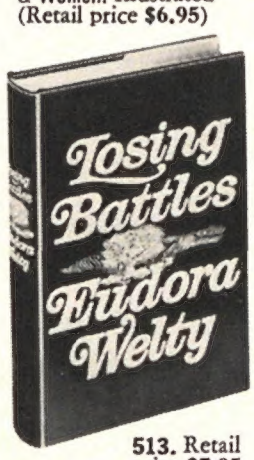

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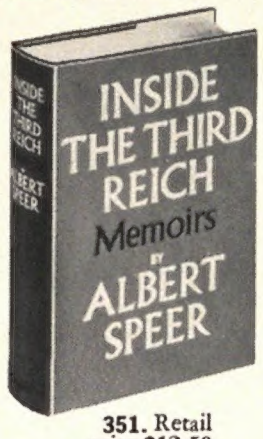

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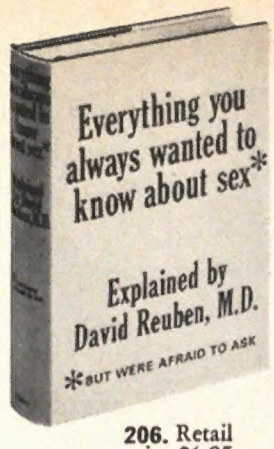

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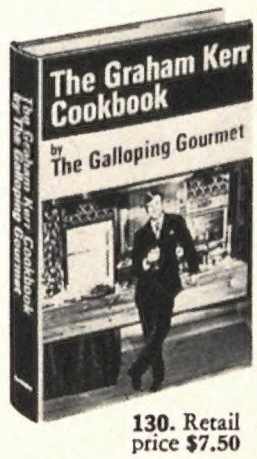

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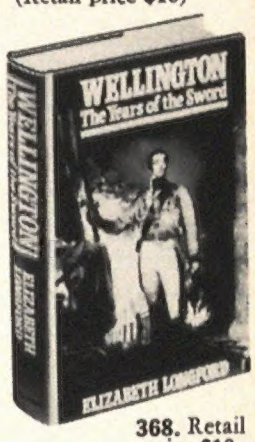

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Smithsonian

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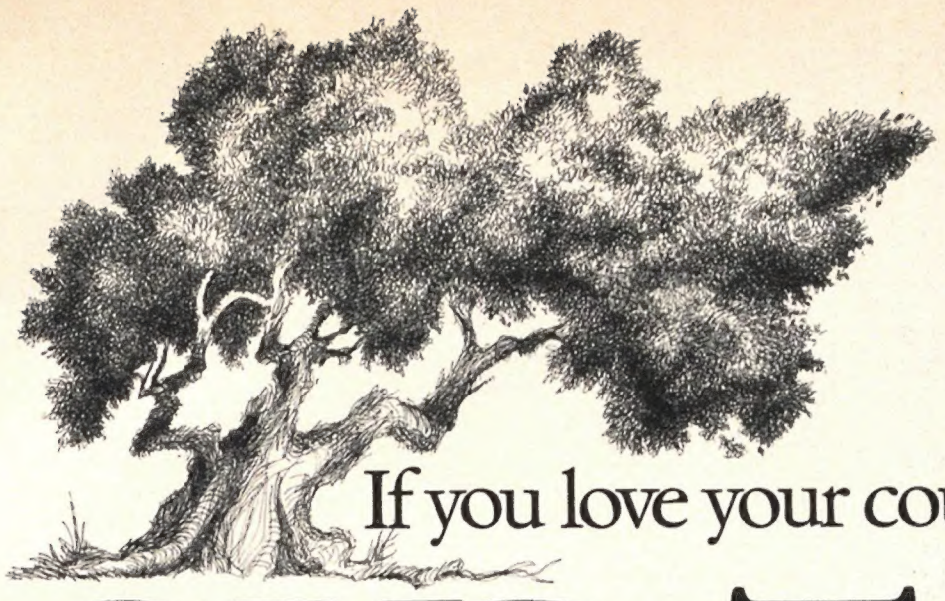

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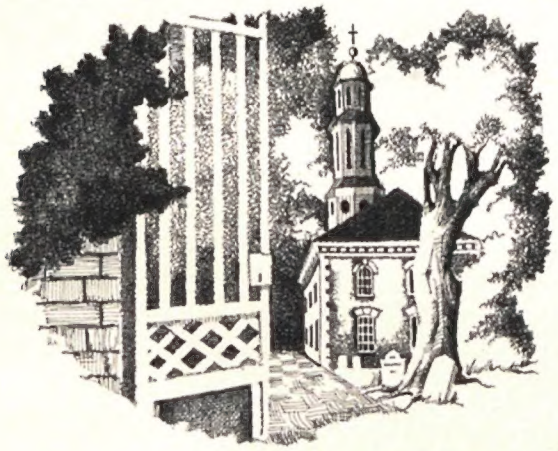

Christ Church, Alexandria

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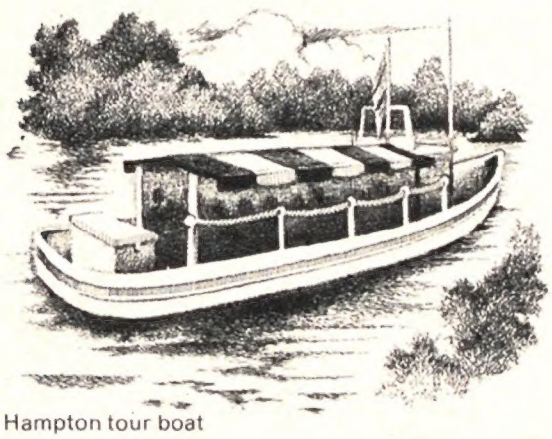

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White House of Confederacy, Richmond

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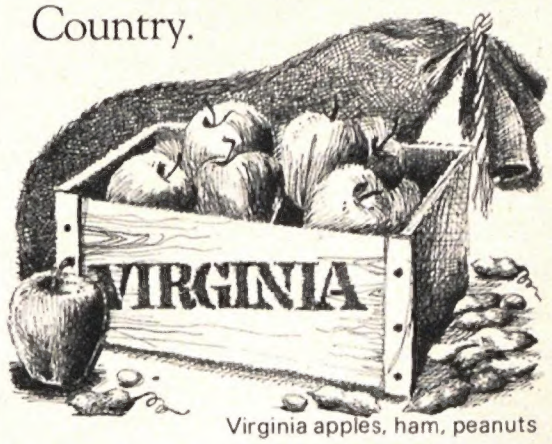

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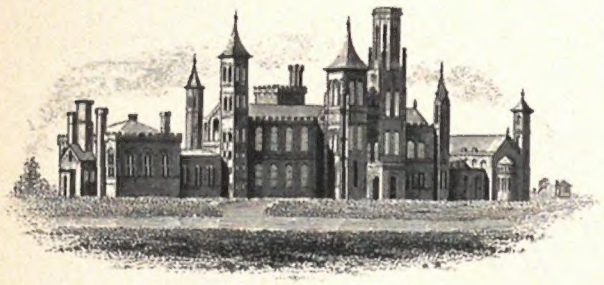
Secretary Ripley's comments

The view from the castle



The next Smithsonian symposium will take up the mass use of drugs, and try to set it into an explanatory framework

When I was young I felt with Richard Halliburton I could climb any mountain, write a poem as well as Siegfried Sassoon, or spit in the eye of the law by driving as fast as the pedal flat against the floorboards would allow. I knew I could do these things without any problem. The world was my oyster and luck was on my side.

Now that I'm older I drive more slowly and tend to get sleepy in the evenings; only the high mountains seem just as exhilarating. Another difference is that today there are not only a lot more of us, but a lot more between the ages of 16 and 25. All of them want to write, drive fast or trade on their luck. Only they have begun to think the oyster is contaminated.

One of the great problems of this age, and of the conviction of the young in their ability to do their own thing, is that a new phenomenon has been introduced into our culture. As Berkeley's Professor Nathan Adler has stated it: "To introduce a trait complex into a culture—whether it be a steel ax into a South Sea Island, 'firewater' on a defeated Indian reservation, or marijuana or LSD to urban youth in western industrial society—is inevitably to introduce disruption unless the trait is embedded in a context that sanctions . . . and controls the social behavior. One cannot legalize or prohibit drug use and abuse by fiat alone. . . ." Without social precedent the excitement runs wild. It becomes mass hysteria, and we know from history that such mass excitations can take place in times of apparent stability, such as the Middle Ages, as readily as in times of change.

Even as our television sets tell us that superbly trained young men through marvels of navigational and electronic precision have landed on the moon, an incomparable feat, the newspapers tell us that the trail of young human wreckage left by heroin addiction in the cities increases every day.

Today's hysteria, "the psychedelic mystique," as Adler calls it, is no more or less than using "psychotoxic procedures for achieving altered states of consciousness," although that can be done in many other ways. Among them Adler mentions "conversion, brainwashing, techniques of induction into the Marines, religious retreats, Loyola's spiritual exercises, Yoga exercises, even including parachute jumping and mountain climbing."

Since the days of Joseph Henry, the Smithsonian has sponsored public addresses on matters of concern. The fourth of our revived symposia, scheduled for November 16-19, 1970, will be in two parts: a series of discussions on the present-day quest for social identity and the mass phenomenon of the use of drugs, followed early next year with an exhibit on drug use as a part of human culture, hopefully setting the present in an explanatory framework of the past.

The impact on the young of the changing chemical environment in which we live, real or imagined, has been to denigrate for them some of the sense of hope, and to induce a craving for self-identification before it is all too late, before some unknown holocaust pervades our planet—hence some, at least, of the psychedelic trappings of psychotoxia. Our purpose in arranging this symposium and exhibit on drugs in our society is to serve our mandate "for the increase & diffusion of Knowledge among men."

S. Dillon Ripley

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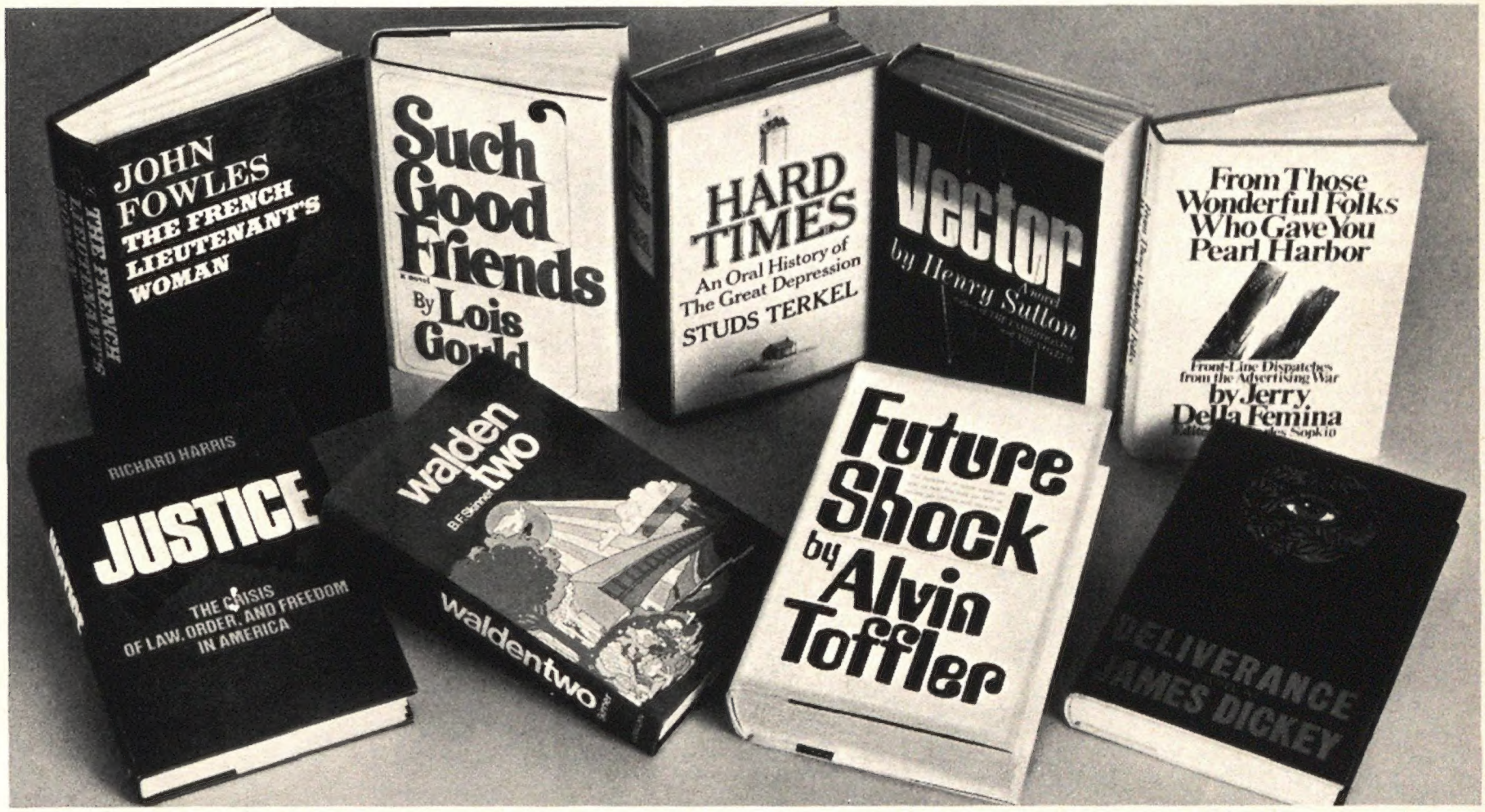

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Letters to the Editor

Minerals

Dear Sir: I need the pictures in Mr. Desautels' mineral article. My mother won't let me cut them out. I am a ten-year-old rock hound. Thank you.

KEVIN P. MCNAMEE

Charlotte, North Carolina

Dear Sir: The minerals are just as pretty and colorful as the Birds of Paradise.

PAUL SEEL

Bala Cynwyd, Pennsylvania

Kites

Dear Sir: The few months that I worked for Paul Garber were an inspirational period in my life. Mr. Garber was one of the most dedicated men I have ever known. He lived and breathed air history. His letters to his colleagues would be an inspiration to students of air history.

MRS. JOHN F. FREEMAN JR.

Alexandria, Virginia

Weather and other controls

Dear Sir: After reading Ann Ewing's interesting article, "Man mounts a global program to do something about the weather," I was left somewhat saddened. Here is man, trying his very best to forecast and control the weather while the most urgent problem of all is being left virtually unscathed—the population explosion. Almost all of our diplomatic and environmental problems can be traced directly to our rise in population.

CHARLES P. SCHOBER

Pompton Plains, New Jersey

Dear Sir: Your article about the Global Atmospheric Research Program raised a question: When should we change, modify and override nature and when relax, appreciate and adjust to the environment that nature provides? I find a closed room with the television turned up to exceed the drone of the air-conditioner less attractive than a dripping hot day and the opportunity of a quick dip to cool off. I am with Isaac Asimov in your May issue, not "Anyone for the Stone Age." But what is the use of predicting and producing rain for people seemingly without enough sense to come in out of it?

RUBY SCHERMAN

Stony Point, New York

Boston Museum and brachiopods

Dear Sir: With a staff as well rounded and expert as yours, an error such as that in the article on Boston's Museum of Fine Arts is surprising. Brachiopods are *not* bivalved mollusks. They belong to a phylum of their own and are more closely related to echinoderms (starfish and sea urchins) than to mollusks.

JUDITH WEINSTEIN

University of Massachusetts
Amherst, Massachusetts

Although the Oxford English Dictionary *defines brachiopod as a "bivalve mollusk," Smithsonian paleobiologists agree that it is a bivalve invertebrate of its own phylum.* Ed.

Pesticides and insecticides

Dear Sir: You boost Rachel Carson's memory, her book *Silent Spring* and her theories about DDT. Would it not be well for your magazine to publish counter theories? The stakes are pretty high.

MRS. MARSHALL L. DOTY JR.

Seattle, Washington

SMITHSONIAN *will discuss the pros and cons of DDT in an early issue.* Ed.

Dear Sir: The color photograph of Miss Carson by Alfred Eisenstaedt was not taken in her garden, but in Rock Creek Park. Also, as Miss Carson's literary agent and friend of 16 years, I would like to dispel any possible innuendo that she took anything more than an occasional social drink.

MARIE RODELL

New York, New York

Mrs. Rodell is correct about Rock Creek Park. Happily, no communication has been received that indicates anyone thought there was an innuendo. Ed.

Dear Sir: The insecticide ad on the back cover struck me as callous and cynical, especially in an issue where the lead article is about Rachel Carson and her fight against pesticides.

"A mere pound to an acre . . . will not harm animals, birds, plants, or people," they say. But what about the other insects? What about the natural predators that live on the ticks? Kill the ticks and these predators will die off making natural balance harder to reestablish.

ANNE SOUTHWORTH

Winchester, Massachusetts

As noted in the comment on the Olin ad elsewhere, SMITHSONIAN *does screen ads. In this case it seemed that if Oklahoma State University and the Department of Wildlife Conservation approved the insecticide, Gardona, it was acceptable. It apparently is not long lasting. Even Miss Carson recognized a need for pesticides and insecticides—it is the long-lasting, persistent, chlorinated hydrocarbons that she and others say are dangerous.* Ed.

A scientific medley

Dear Sir: As a student of geography and environmental engineering at Johns Hopkins I do enjoy specialized journals, but your medley of astronomy, aviation, biology and current ecology in recent issues is delightful nonetheless.

HELEN FOX

Baltimore, Maryland

From the Senate

Dear Sir: It is a pleasure to receive such works as the new SMITHSONIAN. Best

wishes for continuing to publish such a high quality, educational magazine!

RALPH W. YARBOROUGH

U.S. Senate

From women—and a man

Dear Sir: This picture [showing Mrs. O.H.P. Belmont and her daughter Consuelo, Duchess of Marlborough, as suffragettes] insults women, the women's suffrage and liberation movement and the intelligence of whoever hired your editor.

CAROLYN MCCORMICK

New York, New York

Dear Sir: I am considerably astonished by the feminist propaganda article by Catherine Drinker Bowen. My concept of SMITHSONIAN is a publication devoted to anthropological, ethnological and scientific reports. Am I incorrect in this assumption?

DR. H. C. DIEHL

Colorado Springs, Colorado

The study of women—and men—could be considered anthropological. Ed.

Dear Sir: I applaud the portfolio of pictures depicting the violence of the feminist movement in its early stages. My only regret is that SMITHSONIAN was not in existence at the time I did a research paper on this subject.

CATHERINE RITCHIE

Brooklyn, New York

Objections to an ad

Dear Sir: I want to go on record as believing that 1) SMITHSONIAN is an enjoyable magazine and 2) the type of city Olin proposes [pp. 32-33, July issue] is the disaster, not the cities with open spaces. I have no objection to your carrying the ad—I just want to vote.

ANN T. SIMON

Wilmington, Delaware

Dear Sir: Although I am most impressed with your general editorial level, Olin's advertisement is perhaps the most crassly insensitive, impersonal and exploitative thing I have seen in a long time. It unfortunately seems to indicate that there is no room for people in cities ("no room for expansive boulevards and miles of townhouses. . . ."). Washington is one of our few planned cities. It is an insult to your readers to publish such an ad, and worse, an insult to your magazine.

RICHARD ELLIS

President, Museum Planning Inc.
New York, New York

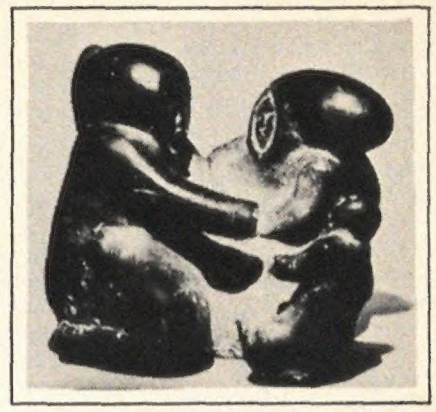
Dear Sir: Granting that a magazine has no obligation to monitor the advertisements it prints, it is nonetheless startling to find a two-page spread in the middle of the July issue of SMITHSONIAN that advocates building just the kind of cities which are disastrous to human values. I should think the preservation of a non-mechanized environment would be a primary aim of SMITHSONIAN. Olin's advertisement not only makes snide digs at beautiful Washington, but advocates the planned construction of the kind of dehumanized machines-for-existing that guarantee a future peopled by subhumans.

TILGHMAN B. PRICE

Reston, Virginia

SMITHSONIAN *does not accept certain types of ads but felt that this represented one point of view and that Olin had a right to express it. Olin itself now says: "We know now that our advertisement headlined 'A Monument to Disastrous City Planning' is also a monument to faulty communication. We expected that to some this . . . might be controversial [but] we never intended to advocate elimination of open space. . . . The 'stack' concept requires plenty of open space for fresh air and sunlight."* SMITHSONIAN *does not necessarily agree with advertisers—or all authors. As any reader can infer, we are editorially concerned with the environment and, specifically, we do love the planning concept of Washington, D.C., if not its slums of today.* Ed.

"Remarkable"*



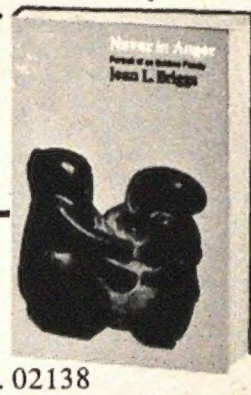
NEVER IN ANGER

Portrait of an Eskimo Family

Jean L. Briggs

Jean Briggs, an anthropologist, lived for nearly a year and a half as an "adopted" daughter in a family of Utku, a remote Eskimo group northwest of Hudson Bay.

Her detailed and anthropologically accurate description of important aspects of a people's life, their emotional concepts and inter-personal reactions to out-of-culture behavior, and her invaluable data on the tensions of field work in an unfamiliar culture is "absorbingly and affectingly written. A remarkable book . . . one that bids to become an anthropological classic." — *Publishers' Weekly**. $15.25 At your bookstore or **mail this coupon today.**



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My check is enclosed. Publisher will pay postage.

Gleaming St. Paul's reveals that Sir Christopher Wren delighted in other colors than soot black.
And surely that blue sky is Venice's, not London's!

London today—photographed by Terence Spencer

By Donald Gould

If London cleans its air and water, why can't our large cities?

Should Wordsworth look today upon his town
he would once again discover it 'All
bright and glittering in the smokeless air'

A few days ago I was walking down Fleet Street in the city of London on a Saturday afternoon so hot that my feet flinched each time I put one down on the burning sidewalk. Fleet Street is almost empty on a Saturday, so I was bound to notice two American matrons hobbling wearily toward me in the heat, and I was bound to overhear one complain to the other about the fellow from whom they had asked directions. He had told them to plod on if they wanted to see St. Paul's Cathedral, but he must have been fooling, for there was still no sign of anything like a cathedral.

Just then they rounded a half bend, and there suddenly, huge and glowing, was Wren's great stone anthem, alive and alight in the summer sunshine, filling and shaping and commanding the entire scene.

These two good, tired, disgruntled ladies simply stopped in their tracks and said, "Oh, my!"

A few years ago this wouldn't have happened. St. Paul's was not a glowing monument, but a soot-black hulk, hardly to be distinguished from its equally grimy surroundings. Like everything else in London, Wren's cathedral was thickly coated with greasy filth which millions of chimneys daily poured into the sky—a filth which for generations fell softly in a malignant mist on all the lovely shapes of columns, spires, porticoes and gables of the town, so that the richness of the place was smothered into a dirty mass.

Dr. Donald Gould, columnist, editor and Londoner, wrote about Peter Scott in May's SMITHSONIAN.

London suffered the full impact of the garbage of the new industrial age. Her air was poisoned and her river stank. Two happy accidents have been responsible for stimulating today's vigorous corrective measures. First is the fact that the Houses of Parliament stand alongside the Thames.

A river can tolerate some organic waste without turning sour. It contains bacteria which break down dead plant and animal matter into inoffensive substances. But to do this job, bacteria need oxygen.

A certain amount of oxygen from the air becomes dissolved in river water. If a lot of rubbish must be dealt with, the bacteria will get more oxygen by breaking down nitrates and so releasing nitrogen, a bland gas which makes up something like 80 percent of the air we breathe. However, if the quantity of organic rubbish is so large that neither dissolved oxygen, nor oxygen from nitrates, can deal with it, the bacteria will start breaking down sulfates.

When you take oxygen away from a sulfate, you are left with the foul-smelling gas, hydrogen sulfide—the stuff that rotten eggs smell of. It is also a highly aggressive chemical which likes combining with other materials, and can therefore do a lot of damage.

About a century ago the load of organic waste in the Thames became so large that hydrogen sulfide began to rise from the river. Riverside citizens became accustomed to the permanent whiff of stale eggs, but sometimes the stench grew so great that parliamentary sittings were adjourned. This, of course, focused official attention wonderfully upon the problem.

The second lucky accident for London happened more recently and concerned the Englishman's curious regard for animals. The English country gentleman will get on his horse, and go out and harass foxes, but he would, on the whole, feel easier after beating his wife than his dog. We show, indeed, an enormous kindness to animals, except those which may be ritually destroyed. But our national conscience in this matter got a tremendous jolt in the winter of 1952.

London had long been accustomed to its own ugly brand of winter fog, which inspired the term "smog," for it resulted from a dreadful mixture of smoke and water droplets. During the foul British winters, water would condense in tiny globules around specks of soot, and the water would also contain dissolved sulfur dioxide (a major component of chimney gases). So London smogs consisted of countless billions of tiny specks of tarry dust encapsulated in small globules of dilute sulfuric acid—exactly the type of chemical weapon

Still uncleaned so far, the Houses of Parliament brood sootily beside the Thames. Its stench of pollution registered on official noses.

A job half finished at Albert Hall reveals the contrast between restored architecture and the grime (at the right) still to be cleaned.

which the generals would be happy to pay some imaginative scientist a handsome sum to invent.

Smog killed people quite effectively. Every time London was subjected to attack by one of these miasmas the death rate showed a sharp peak spiking above the normal for the time of year. Most victims were old and nobody bothered a great deal.

Smogs also caused chaos on roads and railways, but Londoners are used to that, so it caused small reaction. In truth, many of us rather enjoyed our smogs. They were something extra to grumble about, and they broke up the grim routine of the winter working day.

Then came the terrible smog of December 1952. An unfortunate duck, flying blind, crashed through the glass roof of Victoria Station and fell at the feet of passengers bravely waiting for trains which were quite unable to move. A performance of *La Traviata* ended when the singers could no longer see the conductor. In cinemas only front-seat customers could follow what was happening on the screen. Yet Londoners enjoyed the same feeling of togetherness that they had achieved during the blitz. Then the really shocking news began to spread around town.

The Smithfield Show was in progress—an annual festival of butchers, where live animals, raised for the table, are awarded prizes before they go to slaughter. When the smog struck, many died before they could be judged or butchered. About 4,000 Londoners also died as a result of that particular smog. But I believe it was the death of a few steers which made people decide that enough was enough. We are accustomed to the idea of people dying, but when you bring a great mass of beef into the center of your city, and it lies down and dies, then you begin to sense that something might be seriously wrong.

Anyway, the smog of 1952 convinced Londoners that something had to be done about their poisonous air, and only four years later the first effective Clean Air Act was passed.

It was hardly ahead of its time. At the beginning of this century just under 400 tons of soot settled on each square mile of London every year. Between the wars, this continuing inky blizzard eased off slightly, dropping to around 300 tons. This was simply the result of the growing use of fuels like anthracite, coke, oil, gas and electricity.

The cost of living with all this filth was incalculable. Even a recent estimate has put the annual national bill for air pollution damage at around $850 million. Chief material victims are buildings and engineering

works. Steel and bricks are attacked by acids formed from sulfur gases escaping from chimneys in homes and factories using fossil fuels—coal or oil. Far graver is the damage done to people.

The commonest result of breathing smoke is chronic bronchitis. This amounts to a slow destruction of the lungs. In Britain the disease kills an estimated 30,000 people every year, and makes many more into virtual cripples who struggle, coughing and breathless, through each night and day. The huge total of 35 million working days is lost annually by sufferers. All this makes clean air a sound economic proposition.

The British Clean Air Act of 1956 was so relatively modest a measure that some American experts claimed it couldn't possibly impinge upon so prickly a problem. Principally, it gave to local authorities the power to designate smokeless zones. Here citizens are not allowed to burn smoky fuels in their grates. Local authorities meet 70 percent of the cost of changing over household equipment to burn smokeless fuel.

This simple measure has worked miraculously well, particularly in London, where boroughs applied their powers with enthusiasm. Some 80 percent of London's smoke came from domestic chimneys, so that smoke suppression in an entire area could be achieved simply by telling a few merchants to sell only smokeless fuel. Any reluctant householder would soon change his heating system and accept his 70 percent subsidy once he could no longer buy the coal to burn in his old smoky grate.

Since the Clean Air Act, London has become a wonderfully brighter city. Graceful structures like Admiralty House, the National Gallery, and the Guildhall were built of a mellow stone which has been hidden under layers of soot for generations. Only within the past decade has it become worthwhile to scrape off the grime and show these places as their architects meant them to be seen.

Now that much of the cleaning has been done, Londoners delight in new beauty, but to begin with there was some uneasiness. We had become so accustomed to the blackness of our great buildings that many people felt that this was their proper state. When the dean and chapter of St. Paul's decided that the new purity of the London air justified the huge expense of cleaning the cathedral stone, they asked the public to subscribe the necessary money. For many weeks afterwards letters appeared in the *Times* protesting the sacrilege. How dare anyone wreak such a change on the dear familiar blackness of St. Paul's! There were even claims that Sir Christopher Wren, knowing what happened to buildings in the London air, had meant his cathedral to be black, and had designed it with that color in mind.

But the protests have disappeared in the face of the rejuvenated stone. London is a more exciting place to move around in now than it has been for many years.

More birds are moving into town. London has always been a wonderful aviary—on the line of a number of migration routes, but recently birds which have

Begrimed since it was built as a duke's home in 1703, Buckingham Palace offered a dingy backdrop for ceremonies such as the changing of the guard.

not been seen here for a long time have been nesting in the city. We now have swifts, house martins and even swallows—insect-eating birds. Ornithologists at the London Natural History Society believe that our cleaner air has encouraged the return of insects that don't care for soot.

Measurements made by the meteorological office show that since the passing of the Act of 1956, the amount of winter sunshine enjoyed by Londoners has increased by 50 percent. The frequency of what are officially described as "dense" fogs has fallen by about 80 percent, and of "thick" fogs by 75 percent. The killer smogs have gone completely.

One man who is particularly interested in the manner in which the health of Londoners has changed during the past few years is Professor Patrick Lawther, a physician and scientist who heads the Medical Research Council's Air Pollution Research Unit, the British equivalent of the National Institutes of Health at Bethesda, outside Washington.

For the past 15 years Professor Lawther has been following the relationship between the smokiness of London air and the well-being of patients suffering from chronic bronchitis. Machines on the roof of his laboratories constantly sample the atmosphere. One sucks air through a solution which dissolves any sulfur dioxide present, and the quantity trapped each 24 hours is estimated and recorded. A second machine draws air through a sheet of porous paper which traps solid particles of soot. Once an hour a new patch of paper is automatically moved into the airstream, and at the end of the day there are 24 round, gray blobs, varying in shade (and this is measured by a photoelectric cell) according to the smuttiness of the air the citizens have been taking into their lungs. Both these instruments are simple, but they allow a highly accurate assessment of the pollution situation.

But Professor Lawther also looks after bronchitic patients and he has taught them to keep a reliable record of changes in their symptoms and their fitness from day to day. The amount of coughing, shortness of breath, and general distress which they have reported has then been compared with the changes in the quality of air.

When this exercise started, 15 years ago, there was a close correlation between soot and sulfur in the atmosphere, and the misery of the patients. They went up and down together. But as the air has become cleaner, it has become increasingly difficult to associate changes in the comfort of the coughing public with changes in the quality of the air it breathed. And last winter, for the first time, there was no correlation whatsoever between the two.

For some years Professor Lawther and two of his staff have been walking from their commuter trains to the laboratory instead of joining the queues for buses and subway trains. This has involved these three in a daily trek of a couple of miles. As each arrives at work he gets inside a plastic cabinet—a whole body plethysmograph—and blows down a tube. Sensors

Now suddenly face-lifted, the old palace façade and its scarlet-jacketed guardsmen resemble the spotless stage setting for a musical period piece.

Lord Nelson, high upon his column in Trafalgar Square, gets a much-needed bath (right) and emerges, pristine, beside his coiled hawser (above).

measure the pressure changes in the cabinet and the tube and so calculate the ease with which air moves in and out of the lungs. The old, sulfurous atmosphere of a London winter morning made the airways in the lung shrink down in size, as if in protest. There used to be a clear correlation between the degree of this constriction and air pollution. Now that correlation has disappeared.

These gratifying changes all suggest that the remaining impurities in the London air are now too slight to damage or irritate the lungs of people who have to breathe it. But there is, still, a frightening annual toll of death and sickness due to lung infection, and to lung cancer, and the improvements flowing from the Clean Air Act have been no more than marginal. The smallness of the improvements demonstrates, in fact, the relatively small contribution which chimney smoke has been making to these diseases.

Professor Lawther is insistent on the central role of smoking in these matters. It is, he claims, ridiculous to be concerned about a little soot, and a taste of sulfur in the air, while at the same time happily condoning the general use of cigarettes, which produce the most intense air pollution imaginable. Any smoker put inside a room containing the concentration of solid and gaseous "gudge" which he produces inside his own mouth and lungs each time he takes a drag would cry out in terror and strive to break his way out.

Compared to the effects of smoking, Professor Lawther also feels that the automobile is of small account.

Diesel fumes, he claims, are unpleasant rather than dangerous. He has a special word of praise for the London Passenger Transport Board, which owns and runs all London's buses as well as the subway trains. By scrupulous maintenance, and by ensuring that all vehicles have engines capable of generating at least ten percent more power than they will need to handle their highest loads, the contribution of the buses to air pollution is kept at insignificant levels.

We hear frightening tales of the concentration of this carbon monoxide building up in city streets. But here again Professor Lawther begs for a sense of proportion. He and three colleagues recently took a car into London traffic. Two of them were nonsmokers. Of the other two, one (a sweet young secretary) had been given a couple of cigarettes, and the other had actually been connected up to the laboratory gas tap with a rubber tube.

The carbon monoxide in the blood of all four adventurers was measured before they started out, and then at intervals during their journey through the busy London streets. In the case of the two nonsmokers, the concentration of carbon monoxide in the blood rose slowly toward that prevailing in the surrounding traffic-polluted air. In the case of the others, the concentration *fell*. In other words, a couple of cigarettes does you almost as much good as a ten-minute session with your head inside a gas oven and in order to recover from the poisoning, you can't do better than nip outside for a few lungfuls of pure street air.

Inspectors eye smoke output

The cleaning up of the London sky has been accomplished with remarkably little bullying. A government department called the Alkali Inspectorate keeps an eye on smoke output from the capital's 22 power stations. These major burners of fossil fuels all use grit arresters to filter off soot. What remain are sulfurous fumes—sulfur dioxide. There are two ways of handling this gas. The first is with tall chimneys which empty the furnace smoke 800 feet and more above ground. There sulfur dioxide combines with moisture in the air, to form a mist of sulfuric acid. This, in turn, is neutralized and settles harmlessly.

The other approach is to wash the chimney gas with a water spray, and to then neutralize the dilute acid before pouring it back into the river. Power stations employing this device produce spectacular plumes of steam which are part of the London scene. Uninformed citizens often look furiously at the billowing clouds, believing that a cynical electricity generating board is using its corporate power to ignore the law. But the plumes are part of the campaign.

Herons have been nesting in Regent's Park, in the heart of London, for the last few years. Many other birds now find the city livable.

Most responsibility for seeing that the Clean Air Act is not offended falls upon the 33 Greater London boroughs. Public health smoke inspectors walk around the streets looking for trouble. They carry a card called a Ringelmann Chart printed with patches in four shades of gray. When a smoke inspector spots an over-active chimney, he pulls out his card and compares the blackness of the smoke to the patches. The Clean Air Act requires that no smoke should be let loose which is blacker than the number two patch on the chart—equivalent to an almost mystical value known as 40 percent obscuration.

If the inspector judges that the smoke goes beyond the legal limit, he will usually knock on the door of the plant concerned and chat with the proprietor, who will then usually apologize and correct the fault, and that will be that. Only commercial premises may still make a certain amount of smoke, so long as it is not too black. Private houses in smokeless zones may not make any smoke at all—except for bonfires, which householders can stoke to their heart's content.

In this relaxed and almost amateur fashion London enforces its Clean Air Act of 1956. In 1968 there were only 13 prosecutions against obdurate offenders—all of them successful.

The same kind of easy informality has marked efforts to clean up the Thames. From Teddington Lock, some 15 miles or so above London Bridge, right down to the open sea, the health of the river is the responsibility of the Port of London Authority.

John Potter, the Authority's River Conservator, points out that the Thames is now far less polluted than many other British rivers, partly because efforts to improve it have been in hand since the beginning of the century. Parliament provided the P.L.A., and other authorities, with the powers to do what might be needed to keep the river clean.

In the 1950s the Thames was still a black and stinking ditch, but hard research on the physics, chemistry and biology of the river was underway. It was found that some power plants draw in as much water to cool their machinery as is sent down to the estuary from the upper reaches during a summertime. And they return this water to the river some 7-8 degrees c. warmer than when they pulled it out. So over the past half century the temperature of the lower Thames has been rising. This has increased the rate at which bacteria have broken down and oxidized pollutants, and the rate at which the water loses oxygen, and the rate at which sulfates are broken down to produce gas.

Painstaking calculations were made of the quantities of sewage entering the river at different places, and of how each of these loads drained the limited amount of oxygen available. Thus it was possible to determine how much sewage purification must be undertaken by the various communities using the Thames as their ditch to ensure that the water would never lose its entire oxygen reserve.

The P.L.A. has gently persuaded local authorities within Greater London to combine the work of some 130 small sewage farms into five or six major undertakings. In the last six years about $60 million have been spent on schemes for making London's domestic and commercial liquid rubbish cleaner before it is poured into the Thames, and almost as much again is due to be spent in the same cause during the five years to come.

The Thames doesn't stink any more. We have yet to see salmon making their way through the London docks toward spawning grounds in the Berkshire hills. But there is now no part of the river which is absolutely starved of oxygen. Freshwater fish are venturing farther down toward the sea, and sea fish are moving farther in. There are anglers on the river bank at Hammersmith after silver and scarlet roach which are busying the water there. Elvers—young eels—which used to be a favorite dish of Londoners, are coming upstream again.

Wordsworth, gazing from Westminster Bridge more than 150 years ago, saw his city "like a garment, wear the beauty of the morning. . . ." Then industrial man spewed his garbage upon it, and all that beauty began to suffocate. But at last the sickness is being cured. London is living again, thanks importantly to the quiet cooperation of local borough governments. Perhaps there is a lesson here for all the world's sick cities.

Sootless sidewalks sprout bright cafés like this one in Mayfair where you can drink your tea and see London's favorite "chicks" parade past your table.

SHOP

THE WALL

CHEMIST

THE VILLAGE

SEATING DOWNSTAIRS

HOT
GOULASCH
SOUP

What kind of world

We live on a tiny, fragile, vulnerable planet. We must learn how to care for it.

Six years ago, Standard Oil Company (New Jersey) affiliates began using a method for washing tanker compartments at sea that helps to eliminate putting any oil into the ocean.

We developed and are using an underwater seismic device that replaces dynamite in oil exploration and does not harm marine life.

Jersey researchers are working with auto manufacturers to develop fuels and emission systems which together will be virtually pollution-free.

Our affiliates are building special plants in Venezuela and Aruba to take sulfur out of heavy fuel oil used by our eastern cities.

We have spent millions of dollars to improve the environmental performance of our refineries and chemical plants, new and old.

Real accomplishment. Enormous cost. But there is much more to be done.

The search for and production of oil by

will we leave them?

Jersey affiliates must continue to be accompanied by vigilant care for the ecology.

Our refineries will be looked at again and again for ways to improve their environmental performance.

We will continue to seek ways to improve our transportation methods on land and sea.

It will take continued dedication and effort to solve our problems. But all industry, indeed all citizens and their municipalities, will have to act with equal concern.

To improve the total environment will take time. It will take billions of dollars. And the cost will have to be shared by all of us.

We intend to do what one company can do to improve the quality of life on this planet.

It will be a long and difficult battle for all of us. But this is a battle we must win.

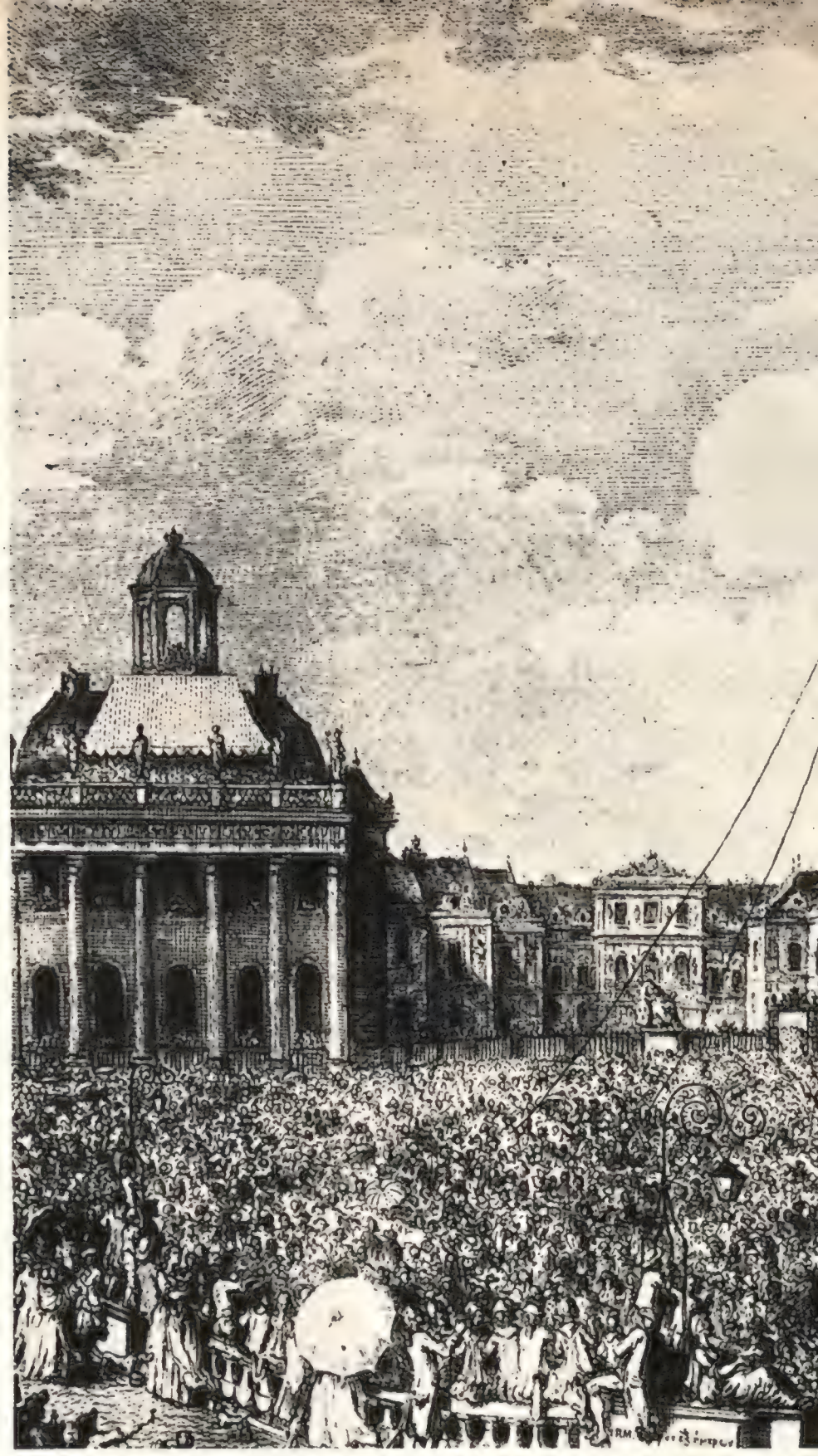
Standard Oil Company
(New Jersey)

Esso

By K. C. Tessendorf

Let's hear it for the aeronaut, who did it on hot air

Empires paused, the beautiful people clapped and corks popped as these daredevils took their giant step on a cloth-bound bubble



To our Apollo-oriented generation, it seems surprising that in the 18th century when Louis XVI and Marie Antoinette held court at the Palace of Versailles, men were already drifting about the atmosphere—sedately or otherwise—at altitudes ranging toward 20,000 feet. These were the aeronauts—the toast of their age. Their craft were great bags of hot air or hydrogen.

The brothers Montgolfier, from a family of French papermakers, first demonstrated the flight of a hot-air balloon on June 5, 1783. The superior utility of hydrogen was known, but paper and cloth were too porous to contain the gas. Professor Jacques Charles, however, fashioned a rubber-lined silk balloon capable of restraining hydrogen and wafted it aloft before a tremendous crowd in the Champ de Mars at Paris that same summer. Zooming to a great altitude, it tore; the gaily colored, fluttering remnant descending upon frightened and bewildered peasantry at a small village near the present Parisian airfield of Le Bourget. "The affrighted inhabitants ran together," said a commentator, "and two monks having assured them it was the skin of a monstrous animal, they attacked it with stones, pitchforks and flails."

The next balloon—a Montgolfière—rose from the courtyard of Versailles with the royal couple in attendance. To see if higher airs would support life, a sheep, a cock and a duck were sent along. This animal kingdom survived a modest ascent that lasted some eight minutes. Now it was time for man.

The King held conservative views about human survival in the air and only temporized to the extent of allowing criminals under death sentence to go up—with a pardon should they survive. This stipulation inflamed a young associate of the Montgolfiers who was bucking hard to be first man in inner space. He made a deal with the Marquis d'Arlandes, who offered to use his considerable influence with the ladies at court to persuade Louis to allow scientific human

A Wisconsin native, K. C. Tessendorf served in the Air Force in both World War II and Korea. He spent a dozen years in airlines and now writes, supported, he says, by a working wife.

Barnyard animals brave inner space over Versailles, September 19, 1783, in a Montgolfière balloon. Their successful flight pointed the way for men.

ascension—provided he, d'Arlandes, was taken along.

Thus it was that Pilâtre de Rozier became the first aeronaut. He was 26, and already a member of the Academy because of brainy scientific innovations. His favorite parlor trick was to blow pure hydrogen, over a lighted match.

His balloon was another of the Montgolfier hot-air line. In order to allow the extended flight, it was necessary to continually replenish the hot air by fire from a grating set below the mouth of the big paper-lined, cloth balloon—a mid-air open furnace. They thought it might be prudent to take along a sponge and a bucket of water.

Following a week of testing at the end of a tethered line, all was in readiness. At 2 P.M. on November 21, 1783, Man soared into the atmosphere from a site in the Bois de Boulogne. All went well at first, and the aeronauts were greatly taken with the splendid view of Paris below—glimpsed between forking tidbits of straw into the flaming brazier. But then: "I perceived that the bottom of the cloth was coming away from the circle that surrounded it. . . . We were rapidly getting down to the roofs. We made more fire and rose again with the greatest ease. I looked down [and] it seemed to me we were going towards the towers of St. Sulpice . . . but, on rising, a current of air made us quit

this direction and bear more to the south. I saw on my left a sort of wood, which I believed to be that of Luxembourg. We were crossing the Boulevard, and I cried 'Get to ground!' "

The aeronauts had ascended over 3,000 feet in 25 minutes. Ten days later Jacques Charles and an assistant went up in a hydrogen balloon. Descending 27 miles from Paris, Charles deposited his companion and took off for a short solo.

Paris and Europe went balloon-crazy. Within the following year more than 50 ascents were accomplished. French public attention and enthusiasm equaled, proportionally, that accorded our moon landing.

English science turned a blind public eye, but entrepreneurs were busy. A doughty Italian adventurer, Count Zambeccari, came to London to try his hand at the balloon game. He failed on this occasion to obtain a backer, but an enthusiastic associate, Vincenzo Lunardi, later managed to patch together commercial support. Thus the first man to ascend from London was an Italian.

Lover Boy Lunardi

Lunardi was an improbable aeronaut. A secretary to the Neapolitan Minister in London, he was young, softly handsome and by nature more poet than prime mover. He liked balloons, but it was the ladies who really turned him on: "I love them all; and shall court their general approbation with as much ardour as the most empassioned lover would that of his mistress. Ah! What glory to ascend my aerial chariot in their view! To be the object of *their* admiration! To have all their eyes turned towards me! All their prayers and wishes breathed forth for my safety! And to hear their united acclamations! Oh heaven! My very brain turns giddy with the thought. . . ."

Lover Boy was ready on September 15, 1784. Hydrogen inflation of the balloon was torturously slow, and the delay angered the restless crowd who almost believed they were being bilked anyhow. To the nervous Lunardi they seemed on the verge of breaking across the barrier. Lunardi leaped aboard the incompletely inflated balloon, and departed forthwith in some confusion. The balloon lifted to 60 feet, staggered, then recovered and rose evenly. Lunardi stumbled about waving a large flag so that all would realize he was aboard. A pigeon escaped, and he broke one of his oars (early aeronauts thought they could steer by wagging oars or fans in midair). He had forgotten his instruments. But it was a minor matter, for now the crowd "passed from incredulity and menace, into the most extravagant expressions of approbation and joy." His vain breast would have swelled even further had he known at that moment George III had taken leave of his ministerial council and gone to the window saying, "We may resume our deliberations at pleasure, but we may never see poor Lunardi again."

But Lunardi was ignoring danger: ". . . Everything wore a new appearance, and had a new effect . . . the

Pilâtre de Rozier, first aeronaut, played with fire by blowing hydrogen over a flame. He used hot air to fly a Montgolfière balloon, November 21, 1783.

Enthusiastic artist placed Madame Blanchard in a miniature gondola. First hydrogen balloon was "slain" (left) by affrighted villagers.

rivers meandering, the sea glistening with the rays of the sun; the immense district below me spotted with cities, towns, villages, and houses, pouring out their inhabitants to hail my appearance. . . .

"I . . . again had recourse to my bottle; this I emptied to the health of my friends and benefactors in the lower world."

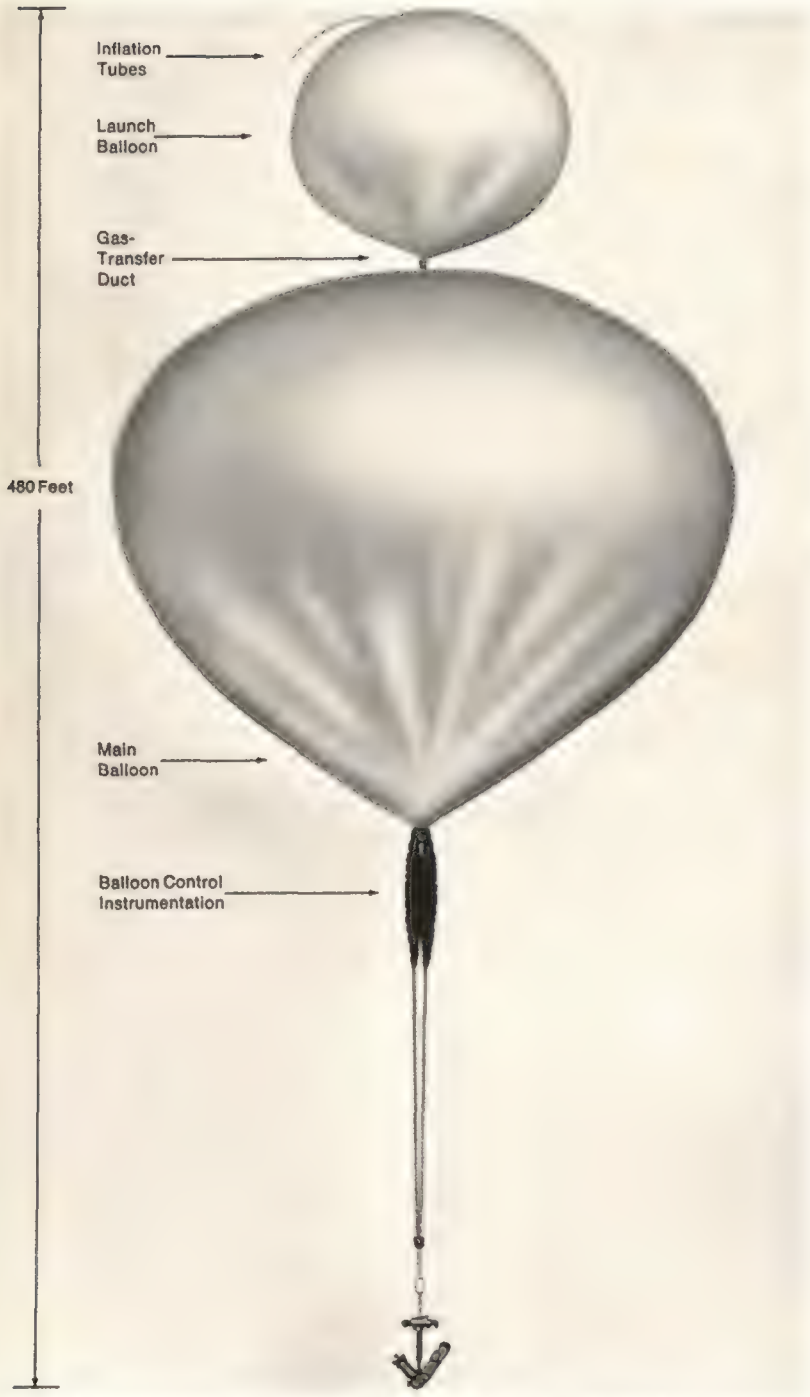
Lunardi coasted on into the English countryside, descending once to permit the cat to escape and after two-and-a-quarter hours being drawn to earth with a rope held by—a lady, of course! He became a professional aeronaut, making various ascents in Scotland, France, Italy, Spain and Portugal. He went up in threatening weather, was dunked in the sea on occasion and died in bed.

The best-known early aeronaut was a Frenchman, Jean-Pierre Blanchard, first to fly across the English Channel. Blanchard was no Lunardi. He has been described as "a ruthless egotist, a mean-spirited and jealous man, a prima donna of the air. . . ." However, his professional abilities attracted a willing sponsor in Dr. John Jeffries, a middle-aged Boston physician then resident in London.

While Blanchard deigned to accept Jeffries' funding of the project, he schemed to increase his fame by making the crossing solo, without the good doctor. He attempted among other strategems to deceive his partner by wearing concealed leaded belts at balloon-lift trials, but was found out. Dr. Jeffries seems to have accepted these peccadillos of his associate with genial scorn—foibles of "my little hero."

After some days in wait for favorable winds, the pair got off from Dover at 1:15 P.M., January 7, 1785. Following a majestic ascent, the balloon began a series of dips; they almost didn't make it. Finally "40 minutes after two (having passed over a number of vessels, and being about three-quarters of the way over from Dover to the French coast . . .) found ourselves descending,

Vincenzo Lunardi was first to rise in England.
Balloons were his second love: They raised
him in the esteem of his first—the female sex.



How a modern balloon—Stratoscope II—works: Small launch balloon lifts the system; its helium gradually expands into the main balloon as it rises. Parachutes return the payload, a telescope.

and very rapidly. . . . We cast out all the little things we could find—apples, biscuits, etc., then one wing; still descending, we cast away the other wing; but not rising, cut away the damask curtains around the car, with gold cord tassels, etc., then stripped off all the silk lining, threw out our bottle of *l'eau de vie*. . . .

"Found ourselves still descending, and now approaching the sea within 120 yards, we proposed and began to strip, Mr. B. first casting away his surtout and coat. I then cast away my coat; then Mr. B. his new coat and long trousers; and we got on and adjusted our cork jackets, and were preparing to get into the slings, when I found that we arose, and that the pleasant view of France was opening to us every moment, as we arose to overlook the high grounds."

The trans-channel balloon settled gently into a forest near Calais at 3:45 P.M., and into history.

Blanchard, the commercial vagabond, later turned up in America and performed at Philadelphia on January 9, 1793, the first manned ascension in the hemisphere before an audience including George Washington. He may have looked a bit bored—it was his 45th ascent. No native American got off the ground before Charles Ferson Durant at New York City in 1830.

Count Zambeccari, the Italian nobleman who had been Lunardi's inspiration, endured, with two companions, perhaps the most grueling of the early balloon experiences. They made a night ascent from Milan, reaching a great and painful height; then descended in the darkness until they plainly heard the roaring of waves on a stormy ocean directly below. Frantically, they jettisoned ballast and instruments; afterward ascending to a tremendous altitude. But they had dragged their gallery in the sea and were soaked. Bleeding and vomiting, they endured in frost-stiffened clothes the miseries of high altitude.

Ordeal by balloon

Zambeccari's account details the final hours of the expedition: "After having traversed these regions for half an hour, at an immeasurable elevation, the balloon began to descend, and at last we fell again into the sea. . . . Although we descended gently, the gallery was sunk, and we often entirely covered with water. The balloon . . . gave a purchase to the wind, which pressed against it as against a sail, so that by means of it we were dragged and beaten about at the mercy of the storm and the waves. . . . Certainly some boats happened to come within sight; but no sooner did they see the balloon floating and shining upon the water than they made all sail to get away from it. No hope was then left to us but the very small one of making the coasts of Dalmatia, which were opposite, but at a very great distance from us.

"Without the slightest doubt we should have drowned if heaven had not mercifully directed toward us a navigator who, better informed than those we had seen before, recognized our machine to be a balloon, and quickly sent a long-boat to our rescue. . . ."

Although Zambeccari had his fingers amputated after this experience, he persevered until a day when his balloon caught fire as it alighted in a treetop. Zambeccari was killed in the fall.

Considering the frail, unmanageable craft men set their lives upon, fatalities were few. A historian tells us that some 500 aeronauts joined the profession (prior to 1865) and there were only 10 deaths in the air. Blanchard expired in bed a year after suffering a heart attack on his 60th ascent. Madame Blanchard then took up her late husband's profession to help make ends meet.

Women had been aloft early, as a lark. But Madame Blanchard went up for business, and specialized in night ascensions over Paris. Her balloon was alight with colored lights and discharging fireworks, and the proximity of spurting flame to captive hydrogen sealed her fate. The balloon caught fire, descended, struck a rooftop and threw Madame out to her death.

But ballooning soon was no longer looked upon as an agent of the millennium. The vagabond, county-fair aeronaut became a fixture in America and Europe.

Of course, right from the beginning there had been interest in military uses. One of the Montgolfiers had suggested the invasion of Gibraltar, then besieged, by troop-carrying balloons. Thomas Jefferson's earliest letter on the subject speculated on similar uses. In the Napoleonic Wars balloons were used for reconnaissance with some success. In 1849, the Austrians attempted bombardment of Venice by releasing balloons carrying time-fused bombs. During our Civil War, military balloonists ascended from vessels in Virginia's James River—the first aircraft carriers. Balloons were the only communication from besieged Paris in 1870. In World War II Japan attempted to incinerate our western forests with trans-Pacific balloons.

Balloons are commonplace today as messengers of meteorology and astronomical observers (left and right). Balloon clubs look after the weekend aeronaut, surveying his planet, in sweet silence.

As the world turns its wondering eye from aeronautics to astronautics, the contrast is most apparent in scale and methods. The moon landing cost billions of dollars. Dr. Jeffries financed that first balloon channel crossing with 700 pounds sterling.

Launch balloon heads for stratosphere with collapsed main balloon (opposite) and three-ton telescope.

By Tom Prideaux

Why Whistler's Peacock Room made feathers fly

The artist was only going to 'touch up' the room a bit, but one touch led to another—and then the owner came home

"No wonder he looks so thin," wrote Whistler's mother to a friend. Her Jimmy, she explained, was "decorating a spacious dining room for Mr. Leyland" in his elegant London town house, and she feared her son, who was 44, might wear himself out perched "on ladders and scaffoldings . . ."

She was right. James Abbott McNeill Whistler wore out not only himself but everybody else while he was painting the famous or infamous Peacock Room in 1876. Today, visitors who inspect this same room, transplanted to Washington's Freer Gallery of Art at the Smithsonian, may be hard put to imagine what a hullabaloo went on within these quiet walls, how they became a battlefield for two proud birds (above), and turned London's stylish art world on its ear.

The affair of the Peacock Room began when Frederick R. Leyland, a rich Liverpool shipowner, pur-

Whistler's revenge: He depicted himself as a poor but proud peacock and his patron Mr. Leyland as a coin-covered bird clutching a pile of shillings.

Photographs by Raymond A. Schwartz, Freer Gallery of Art

chased a London house facing Hyde Park, and resolved to rebuild and furnish it until it seemed fit for a Venetian merchant prince. Since Leyland's mother had once sold pies on the Liverpool streets, he was bent on showing the world that he had become a self-made man of taste, which in truth he had. For several years Leyland and his wife had befriended the American-born painter and his mother, inviting them to their Liverpool mansion while Whistler worked, fitfully, on portraits of the Leylands and their children.

Mrs. Whistler frowned on her son's Bohemian friends and mistresses. But she was grateful for the respectable Leylands, and reported happily that while they temporarily resided in London "Jimmy was most there, dining or going with them to the opera, which was a healthy recreation after his long day's work." She had not heard the rumors, never proved, that Jimmy's recreation with pretty Mrs. Leyland was not entirely platonic.

To glorify his new residence, Leyland hired and consulted leading London architects, wanting especially to provide a proper setting for his handsome collection of paintings. One of his most recent prizes was Whistler's *Rose and Silver: The Princess from the Land of Porcelain,* a landmark in the artist's career. Whistler had been commissioned by a Greek friend in London, Consul General Spartali, to do a portrait of his daughter Christine, a black-haired beauty with liquid eyes and ivory skin. In line with Whistler's pas-

Tom Prideaux, Life *theater editor since 1938, is the author of* The World of Whistler, *to be published by Time-Life Books and Little, Brown this month. The opinions expressed in this article are his own.*

Pennell Collection, Library of Congress

One of Whistler's preliminary sketches for the panel of scrapping peacocks shown overleaf.

sion for Far Eastern art, he posed the Greek girl in a Japanese robe against a screen. The Consul did not like it and refused to pay for it. In consequence, Whistler's sympathetic friend, Dante Gabriel Rossetti, displayed the painting in his own studio to try to catch another buyer. One near-purchaser turned it down because he objected to Whistler's huge signature across the top of the canvas. At this juncture, Rossetti suggested that his friend invent a more discreet insignia. And this resulted in the famous "butterfly" trademark, created from the artist's initials "J.M.W."

No one knows exactly which of his pictures was first signed with the butterfly because Whistler was often asked to add it to earlier works. It appears four times amid the Leyland peacocks.

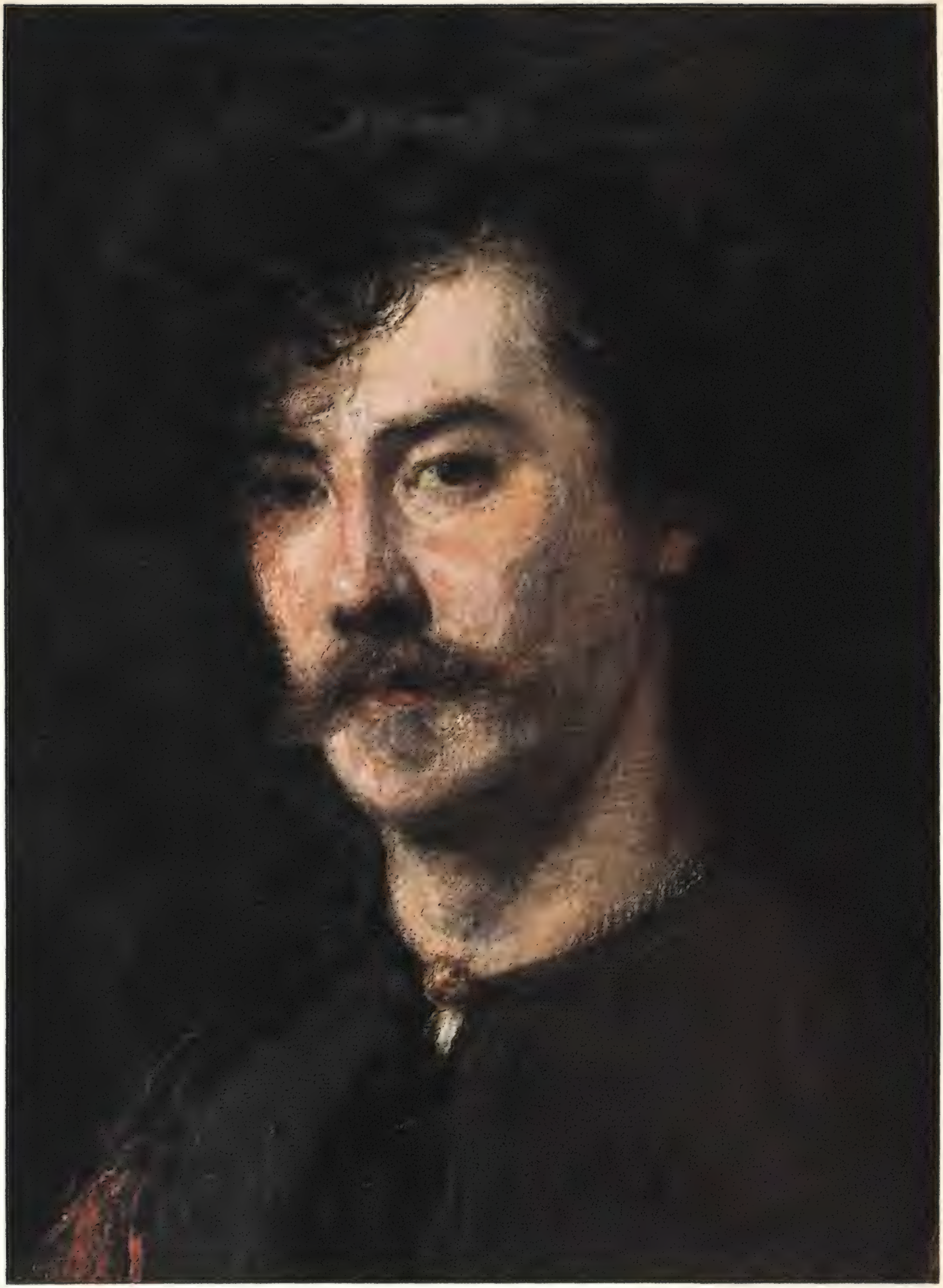
As the first owner of *The Princess from the Land of Porcelain,* Leyland planned to hang her over his dining-room mantel, appropriately surrounded by his collection of blue-and-white Chinese porcelain. The decoration of this room was entrusted to a young architect, Henry Jeckyll, who hoped thereby to boost his reputation. To cover the walls, he had obtained £ 1,000 worth of antique leather, gold-colored and embossed with reddish flowers and pomegranates. This was the emblem of Catherine of Aragon, Henry VIII's first wife, who might have brought the leather with her from Spain. Jeckyll studded the ceiling with glass gas fixtures that looked like Japanese lanterns, and lined the walls with shelves for the porcelain.

But when the room was finished and Whistler saw his Princess ensconced, he complained, rightly, that the red flowers of the leather and a red border on the rug clashed with the delicate color harmonies of the painting. He proposed to snip the border off the rug and tone down the flowers. Leyland agreed and went off to Liverpool leaving the artist in command. Whistler soon found that daubing at the flowers didn't help much, and highhandedly decided that the only suitable solution was to paint the whole wall blue and emblazon it with gold peacocks, a theme he had apparently toyed with before but never carried out.

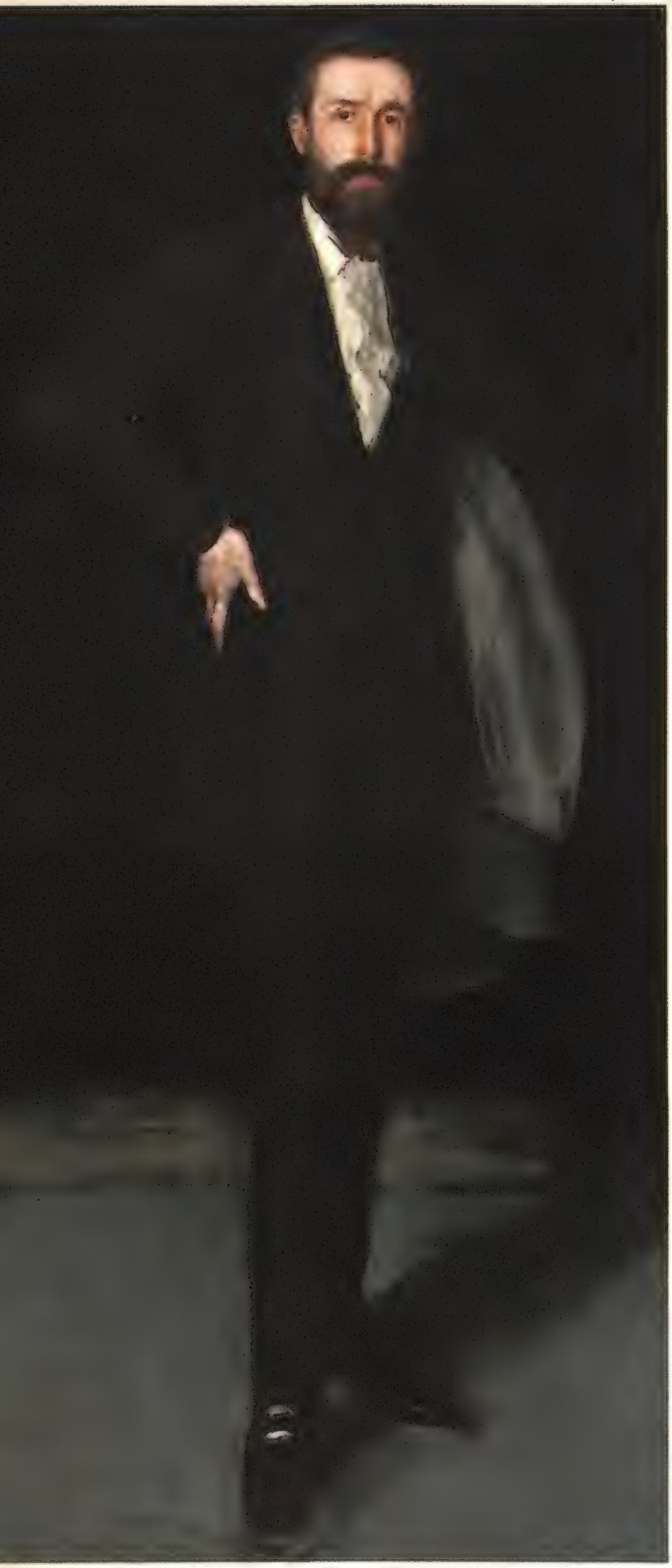
Forthwith, he was in a peacock frenzy. He went berserk with gold and blue. With the help of two

This portrait of Whistler was painted by Henri Fantin-Latour, a friend of his early years.

Freer Gallery of Art



Freer Gallery of Art



Arrangement in Black, Whistler's portrait of Leyland, was painted in 1873 while they were still friends.

neighbors from Chelsea, the Greaves brothers, he started work at seven each morning. As the peacocks took form, Whistler seemed to spread his own wings. He grandly invited people to gather at Leyland's house and watch him paint "the loveliest thing in the world." Welcoming callers from the scaffolds, he jumped down to serve them tea and swept one lady visitor into a waltz. Queen Victoria's sister, Louise, dropped by, as did Lord Redesdale and, well, *everybody*. It was the chic thing to do.

The misfortune of Henry Jeckyll

The event caused so much chatter and gossip that there were many versions of what happened. But certain facts seem sure. Whistler had leaflets printed, explaining his peacocks to the public and press. And when Henry Jeckyll heard about these goings-on, he hurried to see what had befallen his precious leather. What he saw stunned him. Amid a throng of visitors, Whistler was painting peacock-feather "eyes" on the ceiling. Flakes of gold leaf floated in the air. Gold and blue pigments spattered the workers' hair. The leather walls? Utterly defaced.

Poor Jeckyll fled the scene. He was found in his bedroom, down on his knees, babbling of peacocks and painting his own floor gold. He had gone insane. When he died a few weeks later in an asylum, Whistler's airy comment was, "To be sure, that is the effect I have upon people."

To place too much importance on Whistler's conduct in the Peacock Room would be unwarranted. But his actions there may have reflected his extraordinary childhood, as well as his later insecurity as an expatriate American living abroad.

The need to assert himself, to cut a flamboyant figure, emerged early. When his father, an engineer, was sent to Russia to supervise the building of a railroad between Moscow and St. Petersburg, the Whistler family went too—for five years. Jimmy was nine. Already showing talent as an artist, he entered the Imperial Academy of Fine Arts—the youngest student in his class—and his singularity was thrust upon him.

After his father's death in Russia, his mother with her two sons returned to America, and Jimmy at 16 was sent to West Point. Only five feet four inches tall, and profoundly unmilitary, Jimmy Whistler had to gain stature in other ways. So he won respect and affection for his drawings and cartoons, and for his witty independence. After being ousted from the Point, mainly for rule-breaking, he was sent by his relatives to Paris, where he took pains to stand out again as a merry and brilliant art student. Since his older half-sister, Deborah, had married a prosperous English doctor, Whistler had a place in London to

hang his rakish hat, and finally made that city his home base.

His etchings and paintings were totally at odds with his public personality. They were as muted as he was boisterous, as tenderly poetic as he was brash. Even the famed portrait of his mother, first exhibited at the Academy in 1872, was to him simply an *Arrangement in Grey and Black*, in line with his strict credo of art for art's sake. That he kicked over the traces in the Peacock Room, and created a glittering explosion of forms, probably indicated his deep need for an emotional release. But if for Whistler it was a catharsis, for Frederick Leyland it was a catastrophe.

Returning from Liverpool, Leyland accused Whistler of wrecking the whole decorative plan of the room and, worse, of turning his home into a showplace for Whistler's antics. When the artist asked to be paid 2,000 guineas, Leyland refused. After a bitter quarrel, Whistler had to accept £1,000. What galled him most was to be paid in vulgar pounds. According to custom, guineas were for gentlemen, pounds for tradesmen.

When Leyland went back to Liverpool, Whistler vowed vengeance. He began decorating one end of the dining room, the end Leyland would face from the head of his table, with two bridling peacocks, one mean and rich (Leyland), the other poor but proud (Whistler). The rich bird has coins among his feathers, and under his claws Whistler painted the extra shillings he felt he should have received. As he was winding up the job, Mrs. Leyland arrived unannounced in London. Letting herself quietly in at the front door, she overheard Whistler say of her husband, "Well, what can you expect from a parvenu?"

That did it. She ordered Whistler out. When he came back a few days later, he was not let in. Everything considered, Whistler behaved outrageously. But he had created a masterpiece of decorative design. His flamboyant patterns of plumage, the bold simplicity of his whole concept, were revolutionary in an era of fussy Victorian gimcrackery.

The good sportsmanship of Mr. Leyland

Leyland might easily have had Whistler's insulting caricature of himself as a rich peacock covered up or destroyed. But, showing his good sense, he kept it openly on display, where it surely amused his dinner guests and must have set off many a juicy conversation about the incorrigible Mr. Whistler. It is said that [Continued on page 34]

On the shutters at the windows Whistler painted huge blue-and-gold peacocks with extravagant tails.

A view of the Peacock Room, looking toward the portrait of the Princess. At right are two of the three pairs of shutters that dominate the room. The fighting-peacock panel is opposite the mantel.

Tours for Associates

The foreign study tours listed below are currently being planned exclusively for members of the Smithsonian Associates. Members wishing to receive further information should write to the Smithsonian Reception Center, Great Hall, Smithsonian Building, Washington, D.C. 20560, specifying which tour or tours are of interest.

Opera in Italy and Sicilian Archaeology: A combination tour offering good seats and backstage visits to the opera houses of Rome, Milan, Naples, Venice, Trieste, Catania and Palermo, along with an introduction to the Greek archaeological sites of Sicily. Mrs. Loudon Mellen of the Washington Opera Society and Dr. Richard Howland of the Smithsonian staff will conduct. Leaves mid-February 1971, for three weeks.

East African Safari and Indian Ocean Cruise: A five-day visit to the great game preserves of Kenya and Tanzania, followed by a two-week cruise to Aldabra and others of the Seychelles island group from and to Mombasa. Dr. George Watson, chairman of the Department of Vertebrate Zoology at the Smithsonian's Museum of Natural History, will conduct—March 20 to April 15, 1971.

Asiatic Turkey: A tour of Hittite archaeological sites in central Turkey and the better-known classical excavations in western and southern Turkey. The itinerary will be planned for short trips out of Ankara, Alanya and Izmir, with comfortable hotel accomodations. Mr. John J. Slocum, staff member of the Smithsonian's Museum of History and Technology and trustee of the Archaeological Institute of America, will conduct. The tour is planned for the late spring of 1971.

Palladian Architecture in Ireland: Visits to private estates and public buildings, with seminars on preservation techniques and methods, in cooperation with the Irish Georgian Society. Dr. Richard Howland of the Smithsonian and the Honorable Desmond Guiness of the Irish Georgian Society will conduct—May 31 to June 15, 1971.

Russian Art and Architecture: An unusual tour of the USSR that includes Armenia, Samarkand, Kiev, Vladimir and Novgorod, as well as extended visits to Moscow and Leningrad. Will emphasize museums, archaeological sites and historic buildings restoration projects—September 20 to October 12, 1971.

[Continued from page 31]

Leyland eventually came to recognize the room as the masterpiece it was, even though its peacock colors made it totally unsuitable as a background for the display of blue-and-white porcelain. The collection was therefore never installed on the shelves.

Whistler painted, altogether, three spiteful caricatures of Leyland, which would have distressed his mother. Mercifully, having moved to the country for reasons of health, what she knew about the Leyland affair was only what Jimmy saw fit to tell her.

Although Whistler's rich benefactors were often an irritation to him, in general they served him well. In the last lonely years after his wife died (he married in 1888, when he was 54), Whistler was sustained by the friendship of a youngish Detroit multimillionaire named Charles Lang Freer, who had made his fortune in railroading. Freer was an ardent collector of Whistler etchings and pastels, and the two men had a mutual enthusiasm for Oriental art. During Whistler's final illness in London, Freer visited him often, and on the artist's last day, July 17, 1903, Freer was on his way to take him for a carriage ride. But death reached him first.

The four lives of the room

Freer was particularly aware of the Peacock Room, having inspected it in 1902 when Leyland's house had fallen to new owners. In 1904, when the room had been dismantled and set up for exhibit in a New Bond Street gallery, it was offered to Freer and he decided to buy it. He had already bought the portrait of the Porcelain Princess, but without thought of restoring her to her original dwelling. Now he had the entire room shipped to his Detroit home, where it was installed in a special wing, and the Princess was back above her mantel. After Freer's death in 1919, she was on the move again when the room was shipped to the magnificent little gallery of art that Freer had endowed in Washington. During 1947-48, the room was taken down for extensive repairs. Now, after being knocked down and rebuilt four times, to have it permanently housed in the Freer Gallery is peculiarly right. For not only does the Gallery contain one of the world's largest collections of Whistler's art (much of it is not on exhibit, though available for viewing by appointment), but its superb exhibit of Oriental art is exactly what Whistler would have wanted as a setting.

The Peacock Room stands as an isolated episode in the artist's life, a sudden eruption of his tempestuous nature. But, in conjunction with his more tranquil works, his nocturnes, gentle landscapes and etchings, the outrageous peacocks complete the picture of one of America's most complex and fascinating men of art.

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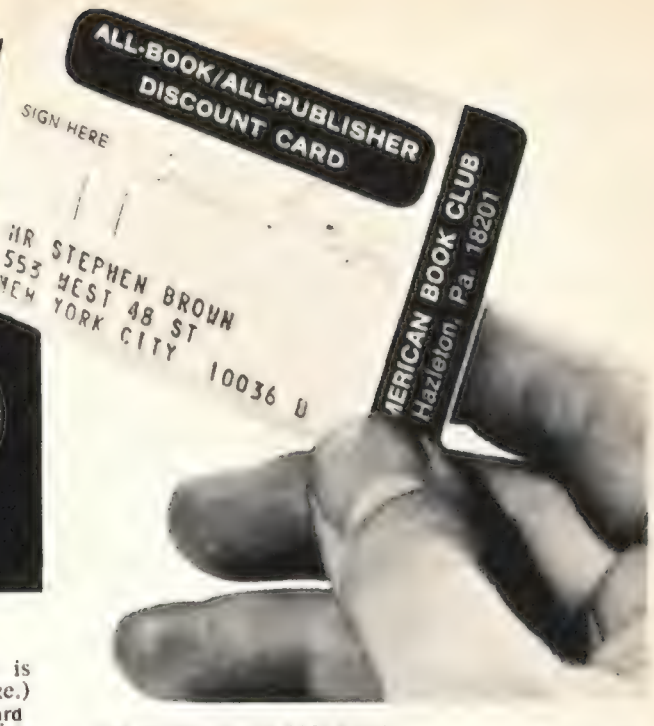

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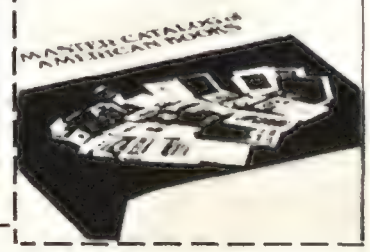

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Oregonians do not yet greet their visitors in quite so traumatic a fashion, but a lot of them want to stop holding open house for all the rest of us.

By Stan Federman

The 'Plumed Knight' rides again in Oregon

Determined to keep their unspoiled landscape as it is, citizens are invoking the image of James G. Blaine, who never saw the place

James G. Blaine never got to be President of the United States. But he is as well known in Oregon today as any man who reached the White House. In fact, the state's James G. Blaine Society may end up as the most popular organization ever to come upon the Oregon scene. Most of Oregon's two million residents claim membership. "I'm a Blaine man" are words spoken with pride by Oregonians.

The Society has a single purpose: to discourage any population surge into Oregon. It is an association devoutly concerned with keeping the state and its abundant outdoor beauties free of tourists. One of its key slogans is "Keep Oregon for Oregonians."

The James G. Blaine Society was the brainchild of the late colorful Northwest author, Stewart Holbrook. During his lifetime he conducted a never-ending one-man campaign against tourism and the possible overpopulation of his beloved Oregon. A native Vermonter, Holbrook came to Oregon while still in his 20s and immediately began a love affair with the Northwest. He eventually became its most eminent historian and humorist, and one of its most prolific—he wrote more than 20 books before he died in 1964. He firmly believed that things should be left as they are, particularly unspoiled Oregon.

Holbrook first resurrected Blaine at a somewhat boring press conference the author was forced to attend early in 1940. It was an election year and one young reporter, not knowing Holbrook's aversion to politics, asked him to name his choice for President. Holbrook grimaced and snapped: "James G. Blaine, of course. A great Republican dark-horse candidate."

The reporter accepted Holbrook's comment without question. Next day, a gleeful Holbrook read in the paper that his man Blaine was "one of the dark-horse leaders at the coming G.O.P. convention in Philadelphia." After that, there was no holding Holbrook. He and some friends ordered "Vote for James G. Blaine" campaign buttons and launched the Society.

But why Blaine? No dark horse, he was a leading Republican of his day, was called the "Plumed Knight" of the Senate, and ran unsuccessfully for the Presidency in 1884. But he never set foot in Oregon, and perhaps that is what recommended him to Holbrook.

It may be only a spoof, but—

Once, explaining the purpose of the Blaine Society, Holbrook said perhaps "the entire Northwest should be set aside as one great park before it is wholly overrun by foreign immigrants like myself."

For the last three decades Oregonians have thoroughly enjoyed the Blaine Society's anti-tourist, anti-overpopulation spoof and devised many ways to scare off prospective new settlers. Oregonians never tell people outright not to come to the state; they merely tick off all its "shortcomings." They suggest, casually, that if the would-be immigrant is really looking for an enchanted place to live, has he ever heard of the absolute wonders of *California?* There are many charter members of the Blaine Society who happily accept credit for California's present overwhelming population and environmental problems.

If a tourist is foolish enough to ask an Oregonian what the state is like, he will generally be told about horrible weather, vast deserts, lack of progress and dangers of new Indian outbreaks. Holbrook and his

followers always referred to Portland, the state's largest city, as "the most backward small town on the West Coast." In any discussion of Oregon's weather Blaine men represent the finest ideals of their Society. They will starkly warn eastern friends of Oregon's "mist"—a phenomenon caused by some 300 days of rain annually ("the other 65 days are damn cloudy").

Lately, the anti-tourist joke has turned real. Holbrook would be astounded to learn that his Society has become a major rallying point for unhappy residents who now demand that their state officials save them from the evils of tourism—now the state's third largest industry. Traffic jams, pollution woes, declining salmon and steelhead runs, ugly neon tourist strips—all are now a part of the Oregon environment. Worst of all, Oregonians have discovered tourists are crowding them out of their state parks, campgrounds and favorite fishing holes.

But Oregonians are a tough breed. They aren't taking all this lying down. There have been serious demands by many groups to put the brakes on the state's highly successful tourist promotion program. The budget of the State Travel Information Division has been heavily slashed this year and legislators are discussing even further cuts in 1971, particularly in Oregon's national magazine advertising program.

Irate Oregon campers have successfully pressured the State Parks and Recreation Division to launch a special campground reservation system this year. It is the first such system ever used in the state for recreational purposes and only the fourth in the country. Under the reservation plan, Oregonians will get first crack this summer at camping sites in the state's ten largest and most popular state parks, seven of them located on the beautiful Oregon coastline. And out-of-staters will be strictly on a first-come, first-served basis.

Residents are continually putting roadblocks in the way of highway builders and developers who might ruin any recreational area with their bulldozing mentality. Governor Tom McCall early this year ordered no further highway development anywhere along the Oregon coast if a road would damage or even modify an area's present natural environment. The State Supreme Court recently handed down a decision which conceivably could have a vast effect on all coastal areas in the nation. The case involved a developer who attempted to fence off the public from the beaches in front of his ocean-front motel. The court ruled that Oregon's beaches were to be used solely for public recreational purposes, and this applied even to a privately owned beach where the public had established prior prescriptive rights through years of past use.

A year ago, Oregon legislators passed the strongest anti-littering laws in the nation. Persons caught littering a highway, for instance, face fines up to $250, six months in jail—and must spend time picking up litter along state roads. Interim legislative committees are currently considering banning all non-returnable beverage bottles in the state or placing a five-cent deposit on such containers.

And so, despite growing population problems, Oregonians are making a strong fight to keep their environment under control. And to keep those "darn foreigners" out of the place. James G. Blaine Society decals are being proudly displayed around the state. Oversized "I'm a Blaine Man" buttons (below) are a favorite at get-togethers where residents can be found discussing sanitary districts, water pollution, litter pickup campaigns and burning bans.

Stewart Holbrook would have been delighted.

THIS SPACE CONTRIBUTED BY THE PUBLISHER AS A PUBLIC SERVICE

Don't let cancer scare you to death.

If there's one thing we must make you aware of it's this: When discovered early, most cancers are curable. 1,500,000 Americans who are cured of cancer are proof. No one on record, however, has ever been cured of cancer by worrying about it. If you suspect you have cancer, do the smart thing; make an appointment with your doctor.

American Cancer Society

Fight cancer with a checkup and a check.

By Lucy Kavaler

How warm-blooded man adjusts to a cruel and cold, cold world

With natural and acquired reactions this frail, exposed creature withstands sleet, snow, chilling rain and frostbite

On March 23, 1756, a Swedish peasant staggered out of doors after a drinking party and fell asleep in the snow. The next day his friends sobered up and went out to find him. As he was frozen solid, they decided that he was dead. He was carried home, and a coffin was obtained. As the afternoon waned, a doctor friend among the mourners decided that the "dead" man had not been examined properly. Although he could detect no breath or heartbeat, the doctor noticed that the pit of the stomach was still a little warm. And so he ordered that the arms and legs be rubbed while he applied heat to the chest. The man recovered.

In 1951 a Chicago woman lay on the street all night in a drunken stupor. The temperature outside was between 0.4 and −11 degrees Fahrenheit. By the time she was found and taken to a hospital, her heart was beating only 12 to 20 times a minute, and she was breathing three to five times. Her temperature was 64.4 degrees, and doctors believed that it must have risen about four degrees before it was measured. If so, she set a record for achieving the lowest observed temperature endured by anyone surviving accidental exposure to cold.

It is also possible that the record holder is a little boy of three who was lost for 20 hours in a forest near Karskoga, Sweden. When taken to a hospital, he appeared dead and his rectal temperature was 62.2 degrees. The child recovered completely.

These people, to be sure, are exceptional, as death usually results from exposure to far less rigorous cold. We are essentially tropical creatures in a world curiously unsuited to our bodies' needs. As warm-blooded animals, we might use the hottest parts of earth as our natural habitat. A naked inactive man is really comfortable only when the temperature around him is 85 to 88 degrees. He is not even perspiring heavily. Let him lie around in a room heated to 80 degrees, considerably above the level at which he would normally set the thermostat of his home, and he will eventually become chilled because 80 degrees is too far below human body temperature.

As quite a number of survivors of accidental cold exposure, like the Chicago woman and the Swedish peasant, have been drunk, the question naturally arises whether the alcohol level in the blood plays a role in improving resistance to cold. Alcoholic rats were chilled profoundly by researchers at the University of Texas Southwestern Medical School in Dallas. Their hearts continued to function at temperatures that had stopped the hearts of a control group of non-alcoholic rats. When rewarmed, the hearts of the drunken rats resumed beating before those of the sober animals.

Exposure to cold is one of the greatest challenges to the body. It is comparable, say scientists, to the effect of fear, rage, pain, asphyxia or extremely heavy physical labor. All call forth a coordinated life-saving response, which was named by Dr. Walter B. Cannon, one of the pioneers in temperature research, as "the fight or flight reaction." The body fights to retain its warm-blooded state, and the metabolism rises to meet the challenge and produce more heat.

This article is an adaptation of a chapter from Freezing Point: Cold as a Matter of Life and Death, *published this month by The John Day Company.*

Freezing Point, © 1970 by Lucy Kavaler

Man is designed to live in a tropical world. *Illustrated by Richard Erdoes*

The first physiological response to the stimulus of cold takes place in the blood vessels of the skin. They constrict so that less blood can flow to the surface and be chilled. The skin thus acts almost like an outer garment, insulating the inner portions of the body. The warm blood is concentrated in the internal organs, and their temperature may even rise slightly.

The hypothalamus, which governs the temperature-regulating mechanism, receives the nerve impulses set off by receptors in the skin and activates the sympathetic nervous system. And just as in the comparable situations of terror or fury, the heart pumps faster and the glands secrete additional quantities of adrenalin and other stimulating hormones. The expression "hot with rage" is literally true; the metabolism rises. And heat is a by-product of metabolism.

When the stimulation reaches the skeletal muscles, the most effective of man's defenses against cold is activated: The muscles begin an involuntary, uncoordinated shivering that varies in intensity with the cold. This is remarkably effective in raising the body's metabolic rate. When a person is slightly chilled, the shivering is only a tremor and increases the amount of heat being produced in the body by 20 to 25 percent. In severe cold it consists of violent spasms, and the results in terms of internal heat production are startling. The increase is 400 percent.

Yet shivering is not enough. It is perfectly apparent to anyone who has ever remained out in bitter weather for any length of time that shivering does not really make him feel warm. Guides on mountain climbing expeditions advise novices not to wait to feel cold before putting on protective clothing. They have observed at first hand that the body heat is not restored. Shivering only prevents further heat loss.

Sometimes when the chilling is rapid, the shivering may come even before it is really needed. Healthy people have been known to start shivering from cold with a rectal temperature of 100.6 degrees. Their skin temperature had dropped, and this drop was stimulus enough. On the other hand, shivering often ends long before the chilled person warms up. He finally returns to his snug house and throws off his coat. His shivering stops even though body heat is still far below normal. Nonetheless he continues to get warmer without any further spasms.

The onset of shivering can be hastened or postponed; it is an example of mind over matter. A woman who hates the cold goes out on a January day bundled up in a fur coat, fur hat, lined boots and cashmere knitted gloves. Her husband, a winter sports enthusiast, wears only a heavy jacket. Yet it is the wife who begins to shiver the moment they are outside; the man is perfectly comfortable. As women, with a conveniently placed layer of subcutaneous fat, are physiologically better adapted to endure cold, the reverse reaction would seem more logical. But shivering can be brought on by the mere fear of being too cold.

Even stranger is the fact that mild shivering can be held off for a time by sheer willpower, by a determined, "I will not be cold; I like the cold."

The U.S. Weather Bureau recently announced job openings for 28 men. The specifications were unusual in one particular: Only men who thought they could live in temperatures of −80 degrees need apply. The job involved manning weather stations in the Arctic. In framing the job specifications, personnel officers recalled that the Army tried a variety of tests to tell who should go to a tropical zone and who to a northern sector. It became clear that the test results were no guide to the rapidity of a soldier's adjustment. A far better way turned out to be asking each man: "Do you like cold better than heat?"

In the course of a normal life most people, even thin ones, are adequately protected from the cold by the body's temperature-regulating mechanism. It fails, however, in emergencies. Deaths from freezing are rare only because recovery is possible until almost the very end. Body heat can be restored with blankets and hot-water bottles, and breathing supported with artificial respiration. If the means are at hand, intravenous injections of glucose are sustaining.

Another rescue technique consists of placing the victim in a hot tub with a water temperature of 110 degrees if he is conscious and 115 to 120 degrees if he is in a coma. Then oxygen is administered. In the Antarctic a few years ago Commander George J. Dufek fell into the icy ocean while being transferred from one ship to another in a chairlift. Upon being rescued, he was given the hot water treatment and he recovered without any injury.

Survival depends upon rescue. A man exposed to extreme heat can function despite elevated body temperature until almost the moment of his death from heat stroke. Not so with cold. The mountain climber becomes exhausted and stops to rest for a moment, falls asleep in the snow and freezes to death. He is a stock figure in tales of adventure. Yet the stories do not exaggerate; they express a simple fact: The victim of cold quickly loses his ability to help himself.

Normal function is impossible. The hiker cannot walk on to reach the shelter; the scientist cannot make weather observations; the driver cannot repair his truck. Virtually all man's defenses against cold come to immobilize him. The constriction in the blood vessels in the skin that is the body's first response to chilling is most marked in the extremities. A drop in hand temperature to only 59 degrees is accompanied by acute pain.

Shivering, the body's major reflex effort against cold, is so unpleasant that it lowers the morale almost immediately. The typical reaction is to huddle miserably and do nothing. In addition violent shivering in heavy spasms makes coordinated activity all but impossible. This is particularly unfortunate because the freezing person's salvation lies in exercise. It is five times as effective as shivering alone in that it actually restores the heat previously lost. The heat produced by strenuous exercise warms the blood flowing through the muscles. This blood travels deep within the body heating the internal organs before returning to the extremities. Thus hands and feet are the last parts of the body to warm up.

The violence of man's psychological and physiological reactions to cold might lead one to assume that man neither would nor could live in frigid climates. Yet he has done so. A good many people inhabit areas of Alaska, Canada, the USSR and Scandinavia that are relatively near the North Pole; the Australian aborigine sleeps naked in night temperatures that are close to freezing, and the primitive Indians of Tierra

Alcohol, it seems, warms both man and beast.

del Fuego, uncomfortably close to the South Pole, wore no clothes to protect them from sleet-filled air and icy water until civilization intruded.

In explaining such phenomena, Dr. P.F. Scholander, one of the world's leading experts in cold physiology, declares: "As to the notion that man does not acclimate to cold—this is for the birds."

An attempt to prove this adaptability definitively was made 25 years ago by Sir Stanton Hicks of Australia's University of Adelaide, who led a party armed with thermometers into the bush in arid central Australia. The natives there slept out-of-doors in night temperatures that averaged 39.2 degrees. They seemed perfectly comfortable. Sir Stanton tried to find out how much their temperatures dropped during the night hours. It proved difficult to make exact measurements, however, because the young warriors refused to submit to a rectal thermometer.

By the late 1950s when Scholander and a group of scientists went back to repeat the experiments, the natives had become much more cooperative. Six Australian aborigines and four white men spent a cold night together. As they lay on their canvas cots attempting to rest, the body temperatures of the white men began to drop. Almost at once they started to shiver, and the metabolic rate increased by about 30 percent. Their internal temperatures thus were held close to normal levels.

Rage increases metabolism and, with it, body heat.

Naked, cold and comfortable

The natives' reaction was markedly different. Although experiencing the same degree of cold, they did not shiver, and their metabolism remained unchanged. As a result both their body and skin temperatures fell to levels below those of the white men. They experienced no discomfort and slept soundly while the scientists were tossing and turning miserably. The natives' adaptation to cold had taken an unusual form. The change had been in the shell of their bodies, the part that lies between the core and the skin surface. The insulation had become greater than normal as a result of constant cold exposure. Although naked, they were wearing an extra coat of flesh. The body shell of the Australians conducts 30 percent less cold to the core than that of white men.

Physiologists then went on to study indigenous people in other frigid areas of the globe, and they made a surprising discovery: The improved insulating capacity that aided the Australian aborigines was strangely lacking in natives of other cold regions. Yet these people were able to withstand as great or greater amounts of cold in comfort. Environment and evolution had produced other modes of acclimatization.

The climate of the islands of Tierra del Fuego is one of the very worst in the world. Rain mixed with sleet or snow falls winter and summer, and a heavy cloud cover conceals the sun. Winds sweep constantly over the barren, rocky islands. The Ona, Yahgan and Alacaluf Indians, who were the original natives, are all but extinct. Scientists succeeded in finding a few Alacaluf and nine of them participated in a research project. They went to bed with a metabolic rate that was 160 percent higher than that of the white men. As the hours passed it fell only gradually, maintained at a fairly high level by occasional fits of shivering. The Indians did not wake up, despite the spasms. Unlike the Australians, their rectal temperatures fell very little—never going below 97 degrees. The skin temperature, on the other hand, dropped nearly as much as that of the Australians to 82.4 degrees. This was only two degrees lower than that of the white men. The feet remained warmer than those of the scientists, a result of better conduction of heat from the body core to the extremities.

The acclimatization of the Tierra del Fuego Indians is metabolic, therefore, whereas that of the Australians is insulative.

A slightly different form of adaptation has occurred among inhabitants of the northern hemisphere—the Pangnirtung Eskimo hunters of Cumberland Sound and the Old Crow Indians of the Yukon Territory. Their acclimatization is akin to that of the Tierra del Fuegans but by no means identical. The metabolic rate at the start of the night is higher than that of the white man but lower than that of the Alacaluf. A key difference appears as the night progresses. Unlike the Australian with his unchanged metabolic rate and the Tierra del Fuegan with his slight decline, the Eskimo and Arctic Indian actually experience an increase in their metabolic rates while they sleep. Other distinc-

Recovery requires rescue and heat from any source.

tive traits are that the rectal temperature falls slightly below that of Alacaluf and white man, although the skin temperature, particularly of the Eskimo, is higher than the white man's. The foot, as with the Alacaluf, remains comparatively warm.

This does not exhaust the number of adaptations to cold. Lapp nomads who live within the Arctic Circle of Scandinavia have adjusted to cold with a variant of the acclimatization of the southern-hemisphere Australian. Their metabolism, no higher than that of the white man at the start of an experiment, rises only slightly during the night. The rectal temperature, therefore, falls in response. Not all Lapps are nomads; some have settled in farms and villages and live in heated houses. By now they have lost their adaptation to cold and respond in much the same way as do citizens of the temperate zones.

Just how far can modern civilized man go in adapting to extreme conditions? Eight young Norwegian students took part in a six-week endurance test in that cold region in the mountains that lies above the tree line. During the day they hiked, fished and hunted reindeer; at night they took their rest lying naked on cots covered only with light sleeping bags, each made out of a single military blanket. The temperature around them was 37 degrees. During the first week they were so uncomfortable that they slept very little. Gradually a change took place. They slept while shivering. As people can get used to almost any kind of discomfort, this response was less surprising than the discovery that they were literally no longer as cold. Skin temperature did not drop as far as it had in the beginning. Cold feet had been particularly troublesome in the first nights, with temperature down to 56 degrees, close to the threshold of intense pain. After the men had become acclimated to cold, their feet remained at a comfortable 81 degrees. This adaptation of these city-bred men was related to that of the Eskimo, Arctic Indian and Tierra del Fuegan. This metabolic rate of the Norwegians, like that of the northern-hemisphere natives, rose during the night, increasing the amount of heat their bodies were capable of producing. When the students returned home at the end of the experiment, they were unable to sleep in their warm beds covered with blankets.

The rise in metabolism was the most significant of their adaptations to cold, but it was not the only one. Small, but useful vascular changes took place in hands and feet. This adjustment occurs whenever people are subjected to cold regularly. Fishermen and butchers, for example, who keep their hands in icy water or on icy meat for long periods, are still able to use their fingers skillfully. When men stay for more than a few weeks in polar regions they change to lighter boots and mittens than they needed at first.

Adjustment to cold is a highly individual matter. Thousands of soldiers suffered frostbite during the Korean War as they fought their way northwards along the Yalu River. But thousands of others, exposed to exactly the same temperatures and dressed in exactly the same type of clothing, did not. Army physiologists observed that cold injury was six times as common among men from warm climates or with tropical heritages as among men from the northern states.

An inherent sensitivity may be in some way related to the circulatory system. When the fingers or toes become chilled, certain of the constricted blood vessels periodically open and allow a flush of warming blood to enter and prevent freezing. This mechanism is much better developed in some persons than in others. Sol-

diers are seldom given the chance to select their duty. Scientists suggest that civilians considering work in our northern states or answering the Weather Bureau's advertisement for polar service might have the circulation of their hands tested. The frostbite-prone could thus be identified in advance.

Although frostbite can occur anywhere, it has been a particular hazard of military operations in the cold, claiming more than 115,000 British victims in World War I. Four centuries before the birth of Christ, Xenophon led an army in retreat across the Carduchian mountains. The soldiers suffered from the piercing winds and biting cold. Some historians believe that Xenophon's leadership was all that saved his men from giving up and perishing in the cold. As Xenophon wrote in his account of the campaign "toes dropped off from frostbite."

Frostbite as a risk and a defense

Dreadful though this sounds and was, frostbite was not an unmitigated evil in Xenophon's day, nor is it now. The warm blood that is directed away from fingers and toes is concentrated around the internal organs and protects them from harm. Frostbite can thus be the price of survival in the cold.

Perhaps someday, Army doctors speculate, better ways of conditioning people to cold than we know now will be found, or drugs will be developed that can safely stimulate the body's temperature-regulating mechanism to work more efficiently. At present, however, they are conceding the impossibility of producing "a superman as effectively immunized against cold as he can be against smallpox or yellow fever."

Lacking immunization procedures, there is no substitute for care. By the winter of 1965 the U.S. Eighth Army in Korea was able to boast of only six cold-connected injuries. Experts maintain that there is no real excuse for any to occur. Even at the Antarctic McMurdo Sound there were only three cases of frostbite during a recent season, and all were minor.

"A man can stay out for hours in cold that is far below zero if he observes sensible rules," states retired Colonel Elmer F. Clark of the U.S. Army Matériel Command, an expert on cold climates. "He should never face into the wind. Each man should keep checking the fingers and noses of his companions to spot frostbite at its first appearance. This is heralded by a patch of white."

The Army has worked out a detailed table explaining the risk of freezing according to the speed of the wind and the outdoor temperature. It rates weather conditions as having little danger, increasing danger and great danger of frostbite for exposed flesh. Should the wind blow at 20 miles per hour, for example, and the temperature be between 5 and – 22 degrees, any part of the body that is not covered by warm clothing is likely to freeze within a few minutes.

The greatest danger of frostbite comes not when the weather is at its coldest but when low temperatures are followed by a thaw or by rain. This situation was first described by Napoleon's surgeon Dominique Jean Larrey, and has been reaffirmed by countless other physicians since heat is lost rapidly from a wet hand or a wet foot.

Unfortunately frostbite most often occurs in places where medical care is not immediately available. Frostbite can be helped by the right first-aid treatment and made infinitely worse by the wrong one.

"Rub them well with snow and escape unharmed," wrote Robert Boyle in 1683. "If those whose hands or feet or faces are frozen approach them too near or hastily to the fire; they are in danger of losing, or at least much prejudicing the overhastily thawed parts."

This unsound advice has had extraordinary longevity. Even today one hears of mountain climbers caught in a storm rubbing their frozen feet with snow. It would be hard to select a more harmful treatment. Both cold and massage add to the likelihood of permanent injury.

Boyle's warning to anyone with frostbite not to "approach too near" the fire is nearly as bad as the rest of his counsel. Rapid rewarming is the very best way to save fingers or toes. Thawing in water between 104 and 113 degrees is the most efficient method. The frozen hand or foot, which is hard and white, should be left in the water only until it looks flushed. On polar wastes, the winter battlefield or icy mountain peak, body heat can serve as substitute, with the hand placed under the armpit, the foot cradled in the arm of a warm companion, the nose covered with a warm

Evaporation is one of many ways the body loses heat.

"A gloomy, melancholy air lowered on the brows."

hand. Care must be taken not to rub the injured area. If it is essential for the mountain climber, hiker, forest ranger, soldier or member of a polar expedition to walk in order to reach a place of safety, the foot should be left frozen until then. Once it is thawed, walking will hurt it.

After thawing, the frostbitten area can be covered with dry gauze. No ointments or tight bandages should be applied and the blisters should not be opened. All of this treatment can be done by the companions of the injured person, and in cases of mild frostbite it is often enough. A quick return of sensitivity indicates that the thawing has been successful.

More serious cases need medical treatment with tetanus toxoid and antibiotics to prevent infection. This may be followed by whirlpool baths in a mild disinfectant and special exercises.

Anyone who has been frostbitten once is in particular danger of a repetition. And a person with a circulatory disease, such as arteriosclerosis, is exceedingly frostbite-prone.

Ask a group of people selected at random whether cold weather is healthy. Almost all of them will say that it is. Does getting chilled bring on the common cold? But of course. These mutually exclusive views are held by a vast majority. For of all beliefs about cold, none is more persistent than that it brings on the common cold. Now a group of doctors at Baylor University College of Medicine, Houston, have performed a study that stands as a denial of this faith. Forty-three volunteers who had been inoculated for the test with a cold virus were sent to a room cooled to 40 degrees and kept there for two-and-a-half hours. By the time they came out they were chilled, shivering and miserable. By all odds they should have been down with colds by morning. The expected failed to happen. A few of them did catch cold, to be sure, but so did some of a second group of volunteers who had stayed warm to serve as controls. In fact the numbers were about equal. The obliging group of human guinea pigs got wet as well as cold, and, again, no more colds resulted than among the people who kept their socks dry.

But what about the undeniable fact that there are many more colds in winter than in summer? The Baylor physicians explain that people are indoors far more in winter than summer and are in close proximity to one another. The astronauts in the 1968 space mission in Apollo 7 were neither chilled nor wet, but they were certainly close together. Captain Walter M. Schirra jr. had a cold and quickly passed it on to his crew members, Major Donn F. Eisele and Walter Cunningham.

The temperature in the Philippine Islands changes rather little from one season to the next, but most colds are caught between June and September. That is the rainy season there. One might think that this supports the wet-feet theory, but the doctors who documented the seasonal fluctuation refuse to believe it. As with the winter in the North, they contend that the rain drives people indoors where they cluster together and exchange viruses.

Physical and psychological ills from cold

While agreeing that cold will not give a healthy person a cold, scientists do not absolve cold of blame for aggravating other physical illnesses. The reduction of blood flow in the peripheral vessels makes cold particularly hazardous for people suffering with the heart condition, angina pectoris. A woman who is able to climb stairs easily in the summer may suffer a mild attack when doing the same thing in winter. According to a study recently completed by the National Heart Institute, moderate exercise begins to be troublesome for angina patients when the temperature reaches a barely cool 59 degrees. The colder the weather, the likelier the onset of the clenching chest pain that characterizes the disease. Cold cuts down on the flow of blood while exercise raises the blood pressure and increases the demand for oxygenated blood. The heart muscle of the person with angina simply cannot fill the need.

If the cold is intense enough, it may of itself cause a rise in blood pressure. Prisoners in the Siberian labor camps have been found to suffer from hypertension, particularly on bitter days.

The effect of cold upon the emotions has not yet been fully assessed. Mentally unstable individuals ad-

just poorly to cold and have more than their share of cold injuries such as frostbite. Fits of depression seize usually equable people under conditions of great cold. This has been a recurring problem among personnel on polar expeditions. "A gloomy melancholy air lowered on the brows of our shipmates, and a dreadful silence reigned among us . . . the hour of dinner was hateful," wrote a sailor traveling through frigid Antarctic waters in the 18th century.

Depression like this, however, could be due to the extraordinary sense of isolation rather than to cold alone. In areas, however cold, where people have a normal social life, emotional reactions are more moderate. The evidence is mounting, nonetheless, that irritability at least can be a side effect of cold. When the cold is severe, the amount of adrenalin produced by the body increases. This increase occurs even without a full-blown "fight or flight" reaction.

Although moderate cold is exhilarating to those who like it, extreme cold is exhausting. The person who started out cheerfully on a mountain climb or hike suddenly finds himself unable to take another step. The pack becomes a burden too heavy to manage. In areas where below-zero temperatures are frequent—Siberia, northern Greenland, the Antarctic—newcomers are incapable of doing any but the lightest tasks. Their breathing is labored and panting. Perfectly healthy men may spit blood, and pains similar to those of rheumatism develop in the joints. The body must be given time to adjust. The same men who are tired within minutes of starting a task on their first day in the Antarctic eventually become able to work for as long as four hours at −45 degrees, or lower, moving hundred-pound fuel drums and performing other hard physical labor. As with all cold acclimatization, some individuals improve more than others.

Remove the average man from his heated office, his warm home, electric blanket and car, and what happens? "Most people can become acclimatized to cold in two weeks of intensive effort," the leader of a recent polar expedition observes. "In the Arctic we begin by taking men out for only an hour at a time. When we see them shivering, we go in again. The next day they find that they can stay out a little longer. They will not adapt, however, if they rush indoors at the first sensation of chilling. A man must endure a little discomfort if he is to become acclimated."

The person living in modern America or Europe seldom needs to become physiologically adjusted to cold as he has succeeded in shielding himself from it most of the time. "His success has been almost solely technological," comments Ralph F. Goldman of the Army Research Institute of Environmental Medicine. "Modern man is probably less well adapted biologically for living in the cold than his cave-dwelling ancestors, who were inured and acclimated to a degree of cold exposure which modern man has been clever enough to avoid."

Many live happily in the world's worst climates.

One leopard makes a traffic jam in Ceylon's Wilpattu National Park. Unopposed by competitors, the big cats prowl their territories.

By John F. Eisenberg

A splendid predator does its own thing untroubled by man

Under the protection of a Ceylonese refuge, the leopard, a threatened species, reveals its daily life to a Smithsonian team

All the world's larger cats are now threatened with extinction. This sad state of affairs has been accelerated because of increasing demands on the land by our wildly increasing human population. Moreover, the trade in cat fur—especially that of spotted cats—has endangered the animals even in areas where they normally would seldom meet man.

We have been late in extending our concern for these large carnivores because of the negative attitude of the "grass-roots" public toward predators and their way of life. The large carnivores have always competed with men for meat, and men have traditionally tried to eliminate them.

During a 14-month survey of animal life in Wilpattu National Park on the island of Ceylon, members of a Smithsonian Institution research team had frequent opportunities to see how one large predator, the leopard *(Panthera pardus),* is able to play its natural role (see cover).

We were soon aware of the importance of the Park's protected leopards in removing surplus game animals from the total population and so acting as one of several checks on the growth of herbivores. At the same time the leopard must regulate its own density by spacing out its population. This it accomplishes by various communication systems. We sighted leopards

Dr. Eisenberg was the field director of the Smithsonian's Ceylon expedition. He wrote about elephants in April's SMITHSONIAN.

96 times, we tracked them, analyzing kills and recording night calls, and so we learned a little about how this great graceful cat plays its useful role in nature and at the same time copes with its own problems.

Wilpattu National Park, in northwest Ceylon, consisted of 252 square miles at the time of our survey. Its center has several small lakes surrounded by grass and scrub, grading into low forest. It was in this ecological setting that we noted leopard behavior.

On Ceylon the leopard is the largest carnivore and has no direct competition. So it is rather bold, moving about much more on the ground than is the case in Africa where it competes with the lion and so takes more often to the trees. We saw leopards most frequently during early morning and late afternoon. Between 11:00 A.M. and 2:00 P.M. the animals tend to rest in the shade, perhaps lying on an overhanging limb or stretching on the ground in an unexposed place.

Leopards begin to hunt in late afternoon and may remain active throughout the night. We could estimate their position after dark by listening to them call. They call frequently in the early evening hours and again just before dawn. By tracking we could tell the movements of calling leopards since they often follow footpaths and jeep trails.

If a leopard's home range contains some small water holes, it will hunt at them, usually one by one, gradually completing a circuit. If the range contains a large water hole or lake, the leopard may hunt successively from different points along the perimeter. When it is not hunting, the animal patrols its range, engaging in a great deal of marking activity. It scratches trees, scrapes ground and sprays urine. Scratching trees are repeatedly visited by the same leopard and one tree in particular appeared to be very near the boundary of two adjacent home ranges. A scratching tree may show a lean or have a very large limb approximately six to eight feet off the ground. When a leopard approaches such a tree, it sniffs at the base and then springs rapidly onto the branch or climbs up the sloping trunk. It pauses to sniff at previous scratch marks, extending itself along the branch. Then suddenly tensing its shoulder muscles, it begins scratching with its forepaws, or it may crouch and scratch backwards with its hind feet. It may spray urine around the base of the tree and impregnate the branch with exudates from the paws or from the animal's body as it scratches or reclines on its ventrum. While reclining at full length the leopard may rub its chest or perineal region on the limb or rub its cheeks on points which apparently bear traces of odor.

Both males and females mark with urine, males more frequently. Apparently scrapes and urine marks leave chemical traces which help leopards communicate with each other on the same trail. Probably the estrous condition of females can be determined by the odor of their urine. This is a well-known phenomenon in domestic cats and has been noted in tigers and lions.

Leopards also communicate, of course, by calling with a repeated series of roars which sound much like sawing wood. At our Marai Villu camp where two leopards frequently called, we counted an average of 13 to 16 "strokes" to a series. After studying the calls of captive leopards at the National Zoological Park in Washington, D.C., we found that one animal would call consistently three times in a row and another averaged 23. We don't know yet whether an individual leopard has a relatively fixed calling rate which helps identify it to its fellows, but we think there may be some truth to the theory.

When a single leopard began roaring in the evening, it averaged about six minutes between calls. In the wild, we heard animals calling in duet—something we cannot easily confirm in the zoo. They generally put on this act on the boundary between two home ranges and so regulated their movements to avoid one another. Of course the female leopard roars as well as the male, so calling may bring the sexes together.

In the habitat we watched, the home range of a given leopard is rather small—about three to four square miles. Within its range, the animal may move almost from one end to the other within a 24-hour period. At first we wondered if indeed a leopard could support itself within such a small area. But by calculating the pounds of meat from prey animals such as axis

Squelching through a marsh, this cat shows no aversion to water. Leopards may swim or lie down in a pool to cool off.

This leopard acts as a natural scavenger as it eats a water buffalo that it did not kill.

deer, available to hunting leopards, and comparing this with what zoo leopards require, we found that a leopard can easily support itself in a favorite habitat with an area as small as two square miles.

In our attempts to count leopard population of Wilpattu Park, we estimated that there were approximately 18 resident leopards. Ten of these animals were reasonably well known to us and four we recognized on sight. There was little or no overlap between the home ranges of adult males, though a given male's home range overlaps an adult female's.

Leopards do not prey on elephants and adult buffalo. They may sometimes take buffalo calves, but axis deer, sambar deer, wild swine, barking deer, mouse deer, porcupine, hare, jackal and gray langur are the usual prey. We examined 29 kills or assumed kills based on all evidence including skeletons, bones and hair retrieved from the feces. In this way we were able to estimate the leopard's diet.

We found that axis deer account for almost half of a leopard's prey and this agrees with its actual numerical abundance. Wild swine however are killed much more frequently than one would have expected since swine themselves are not particularly abundant. However most swine taken are young. An examination of swine mortality indicates that over 50 percent of young swine are killed within the first two months of their life. In our particular study area leopards generally killed near a water hole. In no case was a kill taken into a tree—common practice in Africa which has also been observed in the southern Ceylon park, Ruhunu. At Wilpattu the leopards generally pulled their kill to the edge of the forest. An animal may return to its kill for three days running. When leaving, it occasionally will cover the carcass with branches.

When hunting langurs (long-tailed monkeys), the leopard may approach by stalking a troop in a tree. If it is sighted, it often makes little attempt to conceal itself. It may walk directly under the tree, looking up at the langurs. They frequently respond by chattering, and the adult males give loud whooping calls, leaping about in the tree, often providing a distraction while the females with young gradually move away secretively to neighboring trees. Subadult langurs, especially males, become excited, whooping and jumping about and, on occasion, may slip and fall, much to the leopard's satisfaction.

Alternately, leopards may lie in concealment near the edge of a water hole. During the height of the dry season, langurs generally gather in small groups to drink, leaving some individuals sitting vigilantly at the forest edge, while others stay up in the trees. As two or three venture across the open grass to the water hole, the leopard has a chance for ambush.

Stalking deer is also a matter of concealment. The leopard finds cover in low scrub near the edge of grassland, or in a stand of grass about two feet high. Here it generally waits until the deer are quite close, then makes its rush.

The leopard is essentially solitary. It moves and hunts alone, and the only social grouping seems to be that of a female and her cubs or the brief liaison formed between a male and a female in estrus. A mother and her juveniles generally associate for almost a year. The youngsters hunt with the mother and when they are about six months of age the mother has them with her almost continually even when she is moving in the open. She indulges in a great deal of typical catlike play with them such as games of chase and mock fighting. Our zoo records indicate that two cubs compose the average litter. In the field, however, we noted only one juvenile in three different mother-young associations. Evidently there is a higher mortality rate of the young in the wild.

Nature has adapted the larger cats to hunt alone, hiding and stalking their prey. If they did not have adequate spacing and dispersal mechanisms, serious over-exploitation of their prey resources could result.

Leopards reached Ceylon from the mainland before the island was geologically separated. Those in India, along with all other great cats, still face the pressure of exploding human populations and their numbers steadily dwindle.

In Ceylon, poachers hunt leopards for their fur. As might be expected, the world of women's fashions reacts variously to the drive by conservationists to prevent illegal execution of these great predators.

Marking a tree with scratches and scent,
leopard shows muscles adapted to carry prey.

By Mary Hamman

Conservation ruffles fur in fashion world

"Some women," explained a much-featured fur manufacturer—whose rhetoric is part Sigmund Freud, part Walter Pater and mostly Seventh Avenue—"don't identify with minks and sables. Those are both small, weasellike animals. A Doris Day might feel cuddly and cute in a weasel but not a Lollobrigida. Feline females like the big cats whose characteristics they share. Swathed in beautiful leopard or cheetah skins, they feel fleet, mysterious, beautiful and lethal. Ocelot, jaguar and tiger—such furs express their personalities."

With the leopard and the cheetah threatened with extinction and the ocelot and tiger in bad shape, the Endangered Species Act went into effect this summer, banning the import or interstate shipment of about 135 species from ocelots to alligators. Yet the demand for spotted furs has never been higher. Some shocked conservation-minded furriers say women have *not* come a long way, baby: They want rare skins as a status symbol just as women in the past paid mad prices for the last fashion feathers of the egret and the bird of paradise. These enlightened furriers think that a woman dining at Le Pavillon in a *real* leopard coat should either carry a sign saying "this coat is five years old," or be snarled out of the place.

Even before the signing of the federal act and New York's Mason Bill, which made it illegal to buy leopard, tiger and cheetah skins in the state and to sell them after this month, Jacques Kaplan, chairman of the board of Georges Kaplan, a big New York fur house, ran ads in the *Times* headlined, "If You Respect Life Wait Twenty Years Before You Buy Your Next Leopard Coat From Us."

But in New York state, especially, most of the 1,300 fur manufacturers feel that they are being persecuted by the Mason Bill. They had only three months to get rid of their leopard and other skins, bought in good faith, and their workrooms became a purgatory of overtime stitchers running up coats at all hours. They reduced prices from the usual $10,000-$15,000.

The Friends of Animals, a New York-based nonprofit organization with 50,000 members, intends to persuade women not to wear the furs of any animals or use any skins in handbags, shoes, coats or suitcases. The society has a large button with the picture of a sad-eyed baby Canadian seal and the legend: BOYCOTT FUR-BEARING PEOPLE. According to Joyce Georgi, assistant to the president of the organization, furriers have struck back by claiming that the Friends of Animals is hired by the imitation fur industry.

"That's ridiculous" says Mrs. Georgi. "We would not even *wear* a phony fur coat because it looks like a dead animal even if it isn't, and we certainly wouldn't publicize phony furs because we want the very idea of wearing fur to be repulsive."

Most furriers react to this with a shrug. "Some people are vegetarians—so what." Well aware that they are not in a booming business—fur sales slipped from $500 million retail volume in the 1940s to $300 million last year—furriers remain optimistic.

Meanwhile, back at the ranch, millions of minks are being bred to produce legal furs. Russian sables are in plentiful supply. So mink and sable type women are in no trouble. But what of the cat women who prefer the furs of the large spotted carnivores?

A perfectly legal answer to their demand has been pioneered by Ben Kahn, Georges Kaplan and other furriers. They are using ranch-bred white mutation mink to make leopard, zebra, cheetah, tiger and giraffe coats. The spots and stripes are usually applied to the white mink fur by making a silk-screen print of the real hide and stenciling it on the mink. The coats are said to be more comfortable than the true skins which are heavier and tougher. No one can tell them apart. They cost between $2,000 to $2,500 a coat.

Furriers who have not yet tried the mink-into-cat business are skeptical. Said one of them: "All right, the leopard can't change his spots but I bet the *mink* leopard can. In six months I'm sure it will be a fainthearted leopard with mighty dim spots."

The Ben Kahn Fur Corporation has sold enough exotically stenciled mink coats in the past to feel confident that they retain their camouflage through bad weather and hard wear. At a recent fur fashion show where Kahn minks were shown in every wild animal disguise, sales were brisk and the women were enthusiastic. Johnny Carson's wife especially admired one of the coats but said that she would not dare buy it because it looked so real and she is in favor of preserving wildlife. This led the Kahn people to produce a button which they give every woman who buys a mink in masquerade. It reads: "IT'S NOT EXTINCT. IT'S STENCILED MINK."

Gina Lollobrigida, here swathed in leopard, protested "It's not I who hunts," when chided for the wildlife devastation her vast wardrobe represents.

Photographs by Charles Phillips

A celebration of American folkways

For thousands of citizens, the Festival on the Mall may have served as a reminder of who we were and what we are

For a brief period this summer visitors to Washington could, if they wished—and well over half a million did—spend their days tasting corncob jelly; watching that forgotten village figure, the blacksmith, making that almost-forgotten item, the horseshoe; remembering that butter doesn't originate in a supermarket but with a quantity of cream in a churn; and learning that there are people in this country who still practice the traditional skills that kept us going before we were industrialized, homogenized and plasticized.

The occasion for these discoveries was the fourth annual Festival of American Folklife sponsored by the Smithsonian's Division of Performing Arts. Participants came from all over the country, but with special emphasis this year on Arkansas and on the Indian tribes of the Southern Plains. There were musicians and dancers among them, and their performances were a major element of the Festival. But folk music has moved out of the hills and into everyone's living room, while the people on these pages continue to practice long-perfected crafts and skills that largely go unsung and unrecorded.

Of it all, one syndicated columnist wrote: "Americans need to know one another and to comprehend the many cultures that make up our nation. The melting pot, in short, hasn't melted. . . . It is time to put aside the pretense of one melting pot for a realization this cultural diversity can be a source of strength rather than weakness." The Festival is the only one of its kind, there ought to be more—and if you want to see for yourself, there'll be another on the Mall next year.

Ben Harris of Little Rock, Ark., is a cooper. He makes barrels by hand, in the way they always used to be made, with very few tools. One is the chamfer knife in his hand, used for beveling the rim.

Timothy and Fred Tsoodle, Kiowas, and young Dusty Wahkinney, a Comanche—all from Oklahoma—were among the Southern Plains Indians who demonstrated the great diversity and vitality of Indian cultures.

Cora Lee Jackson of Fairfax Station, Va., shows two ways of making butter—with a dasher churn, at left, and a barrel churn, at right. You can also make it by shaking up the cream in a Mason jar.

Coppersmith Erwin Thieberger of Kensington, Md., has worked with the metal all his life, making not only the lanterns and sconces shown here, but many other objects based on traditional patterns.

Norman Hill of Woodbine, Md., with a shiny milk pail and a handsome Holstein. He milked ten cows twice daily, to the delight of large audiences of children who were discovering a natural process.

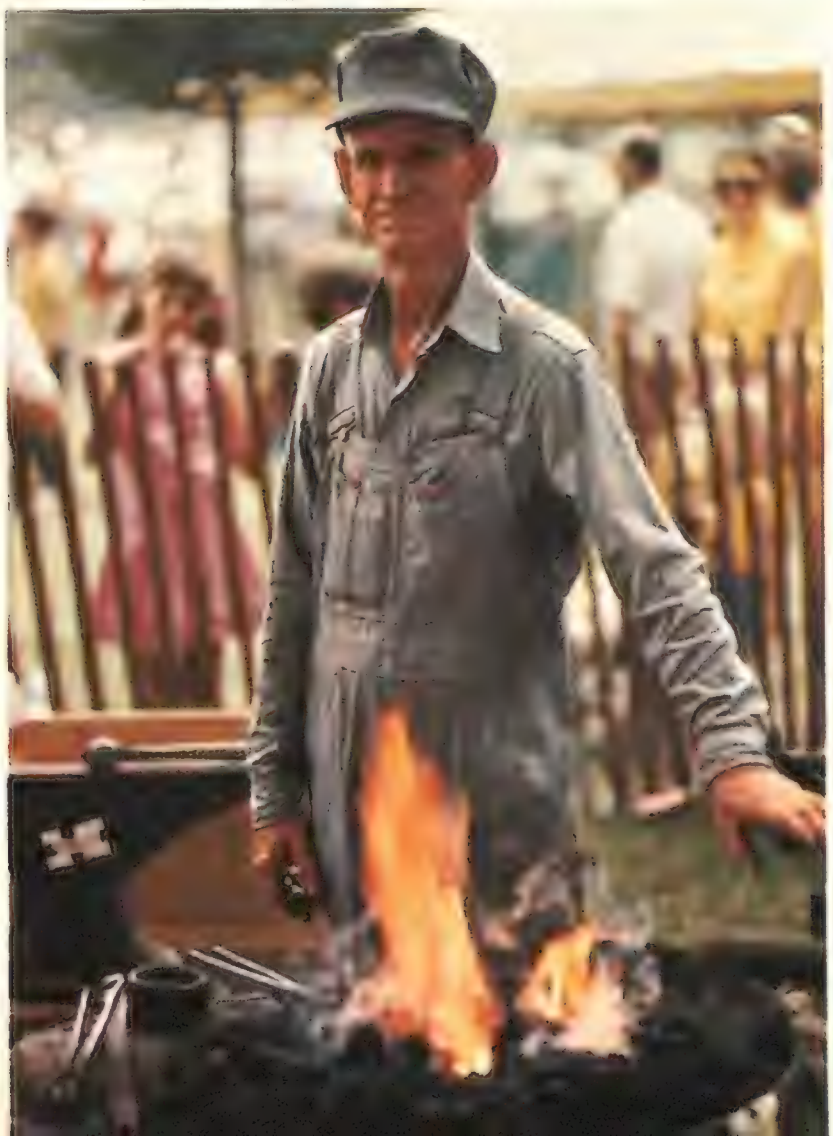
Junior Cobb of Three Brothers, Ark., is perhaps not really a folk artist—his woodcarvings seem too sophisticated for that. But he uses traditional techniques to sculpt his vivid portraits in walnut.

Jessie Lanphere of Bull Shoals, Ark., with some of the ingredients of her corncob jelly—not an easy thing to cook because her wood-burning range did not take readily to conditions on the Mall.

American Gothic: The log cabin, a paragon of honest architecture, is still being built in the Ozarks by Claude and Bill Phillips of Berryville, Ark. Here they stand before a framework of hand-hewn cedar logs.

Mrs. Gilliam and Mrs. Johnson of Hellier, Ky., display patchwork quilts made for the Pike County Citizens Association, which seeks to improve conditions in their devastated strip-mining area.

There may not be any spreading chestnut trees in Berryville, Ark., but Isaac Doss still stands behind his forge, making nails, horseshoes and other useful objects that play a role in rural life.



George Gibson of Springdale, Ark., weaves his baskets—all are essentially the same style—of split oak. He sells his sturdy wares at roadside stands within a hundred-mile radius of his home.

Collection of The Corcoran Gallery of Art

Book reviews

Author Scott Hart reviews three recent books that recapture the drama of the Great Depression

The causes of a great depression are complex, but not always invisible. The horror beginning in the United States in 1929 grew from greed which spewed millions of sensible men and fools into stock speculations, resulting in a crash. Upon a nation now standing in storm comes a series of books that reduce present calamities (barring the deaths in Vietnam) to something like a relaxing sunbath.

A Nation in Torment by Edward Robb Ellis (Coward-McCann, $10) should remove "the Great Depression" as casual words for those who endured it—and have forgotten much—and those who fortunately didn't. It will become an awakened agony, a rip in the soul of the nation that no mending can bind. And, perhaps, even something else: The story sufficiently proves that the average individual American is strong in spirit and his country is indestructible from within.

The results of depressions generally have wearied readers of long-hair studies loaded with graphs and the ice of impersonal statistics. The actual meaning is lost. A depression means unemployment and hunger that pains the belly; it means children who hanged themselves in agony because of the desperation of their parents; a father who stole bread and killed himself in shame; women who sold their bodies for a dime; men riding freight trains aimlessly and others fighting like animals for the filth in garbage cans.

The Depression of the '30s meant, inevitably, the search for a scapegoat, and Herbert Hoover's bland bleating only enhanced his chances, because surely no one could say that the time and the man had met. Perhaps Babe Ruth made the hardest swat at the well-intentioned President whose mind was as stiff as his chin-choking collar. Ruth, early in the Depression, was offered $70,000 a year by the Yankees but wanted $80,000. This, exclaimed a friend, is more than is paid the President.

"So what?" Ruth snorted. "I had a better season than he did."

The anecdote is the opening paragraph of a chapter whose title alone, "The Reconstruction Finance Corporation," might scare off anyone except a jailbird with nothing else to read. The massive book is almost one delightful anecdote piled on another—the results, we are told, of 10 million words of material assembled by the author across a 43-year period. Having read the book, the most bruised survivor of the Depression will reflect that he had known very little of the depth and horror of the calamity. He learns the economics, as well. Mr. Ellis has an extraordinary talent for weaving the heavy backdrops through the wringing hands of despairing people, and weaving with wit and swiftness and humor, but without ever once losing compassion.

What is said about the causes, banks and general political intrigues is fairly well-known stuff. The strength of the book is formed by *people*. The mannerisms and backgrounds of faceless hoboes, Okies or apple sellers, their way of walk and talk, are as vivid as the descriptions of such well-knowns as Joseph Kennedy, Bernard Baruch and Richard Whitney of the Stock Exchange. Or Huey Long and Douglas MacArthur, considered by Franklin Roosevelt as the two most dangerous men in America at the time.

It is unfair to this book to select a few anecdotes, because it is reaching at random into a treasure-house. But here:

Charles Chaplin remarked to Playwright George S. Kaufman that his blood pressure was down to 108, and Kaufman inquired, "Common or preferred?" Around the day of the crash, bums on the Bowery understood that stocks were being offered for a nickel a share and began furious panhandling to enter the market.

The apple was the symbol of the Depression, and how men came to sell them on the streets is disclosed. Mr. Ellis, on the whole, bridles his own emotions—lets men make heroes or villains of themselves. He agrees with Barbara Tuchman who said of her role: "I am a seeker of the small facts, not the big Explanation; a narrator, not a philosopher."

But for the estimated 45 million Americans living then in "dire poverty" his pity continually breaks through though he never sobs. The humor-drenched book is not the humor of Mr. Ellis but rather belongs to the American people, and it may, indeed, have been one of the elements that saved them until the war came along and put them back to work.

* * *

If Herbert C. Hoover had minded his mining and been content with the honors resulting from his almost unparalleled humanitarian efforts for the relief of suffering Europeans in World War I, his expressionless face would glow in the gallery of great Americans. But he was *too* great (as was General Grant) and consequently became President of the United States. *The Shattered Dream* by Gene Smith (William Morrow, $6.95) shows that he was indeed a gut-thinker, a master of facts and emergencies which precise charts, statistics and a warm though hidden heart might solve. But for two reasons, at least, he was unqualified to be in the White House during an insoluble depression and the threat of revolution. He was convinced that the tradition of Rugged Individualism was sound and could cope with any crisis; and his withdrawn posture projected a gloom the like of which an old-fashioned funeral director would have envied.

Now Gene Smith, remembered for his

Opposite: Mary Cassatt, *Woman with a Dog,* 1883. This is one of the color plates in Adelyn D. Breeskin's *Mary Cassatt: A Catalogue Raisonné of the Oils, Pastels, Watercolors and Drawings,* which will be published in November by the Smithsonian Institution Press ($29.95). The largest exhibition of Mary Cassatt's work ever held will open at the National Gallery of Art in Washington on Sept. 26 and will run through Nov. 8.

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When the Cheering Stopped, has grabbed hold of Hoover and with swift pace and objectivity relates the man's early struggles, his molding in the Quaker severities, his physical courage during the Boxer Rebellion, his great work in foreign relief, and onward and upward to the time when canny Calvin Coolidge, probably foreseeing a hard time coming, did not choose to run.

It is strange that Hoover, with all his seeming hindsight and foresight, should have deliberately leaped into a calamity which he foresaw. Smith says that Hoover had long regarded himself as a doctor of sick concerns (a trouble shooter) and "had expected the Depression." He had protested to Coolidge about the easy-money policies, and had warned against the mounting stock market madness. But he was not frightened in 1929; failure had been no part of The Great Engineer's background.

The story is straight history, fascinating with its stream of anecdotes about such personalities as Al Smith, Andrew Mellon, Roosevelt and predominantly of Hoover and the enigma of his personality. And behind it all extends the gloom of the Depression, with the gloom of Hoover's face superimposed—as though he were responsible for it all, which of course he was not.

In its down-to-the-mud approach to the storm of the '30s, and its wealth of intriguing sidelights, the story is a worthwhile contribution. But it leaves unsolved, at least in entirety, the mystery of Hoover the man. One can draw more than an inference that his immovable adherence to Rugged Individualism—the objection to too much federal intervention—was responsible for a lack of hard action. Nothing of the daring of Roosevelt was in him.

But of Hoover: "He remains an enigma," Mr. Smith concludes after his four years of research. "William Allen White said it would take decades for history to render judgment on him. Decades have come and gone, but the judgment is still hanging in the balance."

Leave it hanging there. To toss the troubles of Hoover into our present bitter cup of controversy is all we need.

* * *

Hard Times by Studs Terkel (Pantheon, $8.95) relates scores of individual experiences during the Great Depression

"Husband and wife come to look alike at last."
—Oliver Wendell Holmes (1809-1894)

From *Women, Heroes, and a Frog,* by Nina Leen (W.W. Norton & Co., $4.95)

reaped from the memories of its survivors by the author, a skilled interviewer, well remembered for his *Division Street.* One reaches the end convinced that should a comparable catastrophe occur, present-day people in their temper would violently revolt.

Curiously, many sufferers of the horror which followed the stock market crash of 1929 believed that they, personally, were failures, individually responsible for their plight. At least, there was widespread submissiveness toward destroying forces thought to be beyond reach and even understanding. Today, in many minds there is a fixed target—the Establishment —despised and held responsible for nearly everything. The possibilities make this highly readable book frightening, and deserving of attention.

All kinds of people speak out, angrily or quietly. There are ex-convicts, migrant workers, miners, showgirls, artists, farmers, breadline veterans and, on the top level, Sally Rand, the fan dancer ("the Rand was quicker than the eye"), politician James Farley, businessman Bill Benton and others. After, say, 200 pages the mind reels under the stories and the Depression becomes an impression, a web of strands made of hunger, despair, bewilderment and savageries.

The stories are so individualized (and how else could they be?) that a sense of disaster on a wide scale is almost lost. Sections of talk by a few national leaders appear foreign to the tales of ordinary

people. It would be well to read *A Nation in Torment* before grabbing this book because the former provides stronger backdrops, a stronger understanding of what the whole thing was all about.

But if sadness, paradoxically, is overlaid with humor—at least in retrospect—this book often is enchanting. Hear Clifford Burke: "The Negro was born in depression. It didn't mean too much to him. [The Depression] only became official when it hit the white man. . . . Our wives, they could go to the store and get a bag of beans. . . . A steak would kick in my stomach like a mule in a tin stable."

And the Oklahoma man. He was a machine gunner in World War I, and was gassed by the Germans. Years later, he came to Washington for his bonus and was gassed by the Americans. Like millions of others he became restless, "drifted back and forth."

There was also a Norwegian-American artist of note, who could reflect: ". . . to me, the Depression was a blessing. When the shock of losing what you had worked for comes, I found refuge in my art. . . . My body may have needed food, but I was unaware."

Some look back into another world, but one tied to the world of today. For example: "That time may have been our most creative period. It was a decade of involvement. It's a cold world now. It was a hot world then."

It was a world of something else, which, to a present-day 23-year-old, bears upon the country now. He spoke into the book: "Fear. It unsettled the securities, apparently false securities that people had. People haven't felt unfearful since. Fear of Communists, fear of people living in sin, fear of hippies—fear, fear, fear. . . . People learned it from the Depression."

And if another depression came, in the view of an attorney, an alumnus of Yale: "People would regard a depression today as man-made. In the past, depressions fell in the same category as earthquakes and bad weather. An act of Providence or God. I don't think there'd be the acquiescence of the Thirties. I think there'd be a rebellion. I think even in these suburbs out here you'd get a rebellion. Exactly what they'd do about it, I don't know. I think there'd be a vigorous and, ultimately violent, insistence: If not my measure, then some other measure. Something and soon."

The reader puts down the book at the end, rewarded—and wondering.

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Smithsonian

Highlights

Traveling Exhibition Service

Some of the Smithsonian exhibits that will appear throughout the country during the month of September are:

New Orleans, Louisiana—"Armand Hammer Collection" (Isaac Delgado Museum of Art, to September 20).
Elmira, New York—"Dutch Art" (Arnot Art Gallery, opening September 26).
Memphis, Tennessee—"Paintings by Carl-Henning Pedersen" (Memphis State University, opening September 12).
Winnipeg, Manitoba—"Royal Buildings" (University of Manitoba, opening September 12).
Clemson, South Carolina — "Georgian Country Houses" (Clemson University School of Architecture, opening September 5).
Santa Barbara, California—"The Concerned Photographer" (Santa Barbara Museum of Art, opening September 12).
Lawrence, Kansas — "Photography and the City" (University of Kansas School of Architecture and Urban Design, opening September 12).

Museum of History and Technology

Two photography shows here until November are: "Stephen Whealton," an exhibition of Polacolor prints, slides and other photographic derivations and "Janine Niepce," 40 photographs by this French photojournalist.

"Mohandas Gandhi" is an exhibit on Gandhi's life and includes photographs and Indian crafts.

The first section of a new Textile Hall will feature a mid-19th-century Jacquard Loom and demonstrations of spinning and weaving.

The Smithsonian Resident Puppet Theatre is presenting "Confetti" through September 17; soon after "Jack and the Beanstalk" will open.

Museum of Natural History

"Smithsonian Scientists Study the Moon Rocks" is a photographic show on the investigation of the contents of the moon rock specimens.

National Portrait Gallery

"Along This Way," a teaching exhibition on black-culture exponent James Weldon Johnson (1871-1938), uses portraits, photographs and recordings to tell about the man and his work.

National Collection of Fine Arts

"H. Lyman Sayen" is the first major exhibition of oils, watercolors and drawings of the Philadelphia-born (1875-1918) artist who became an expatriate in Paris. The show will open September 25.

A large Winslow Homer exhibition is on display for an indefinite period.

Arts and Industries Building

In addition to the one-pound piece of Apollo 11 moon rock, an Early Bird Satellite—the operational backup model for the world's first commercial communications satellite—is here indefinitely.

"Polish Folk Art," a selection of costumes, wood carvings and decorative forged iron pieces, is to be here until September 21.

"Dorothy Liebes Retrospective" shows the work of the famous textile designer over a 30-year period.

"Vibrating World" uses black-and-white photographs and a film to explain cymatics—the structure and dynamics of waves and vibrations. The exhibition is circulated by IBM.

"Today and Tomorrow in Space" is a show of paintings by Robert McCall.

"Woman—Aspects of a Grand Theme," an international exhibition of 522 photographs by 236 photographers from 85 countries, opens its first U.S. showing on September 2.

Wernher von Braun and Frederick I. Ordway III have compiled the HISTORY OF ROCKETRY & SPACE TRAVEL from the ancient Babylonian concepts through today's missions to Mars, Venus and the Moon. 253 pages of text with color illustrations. $17.50.

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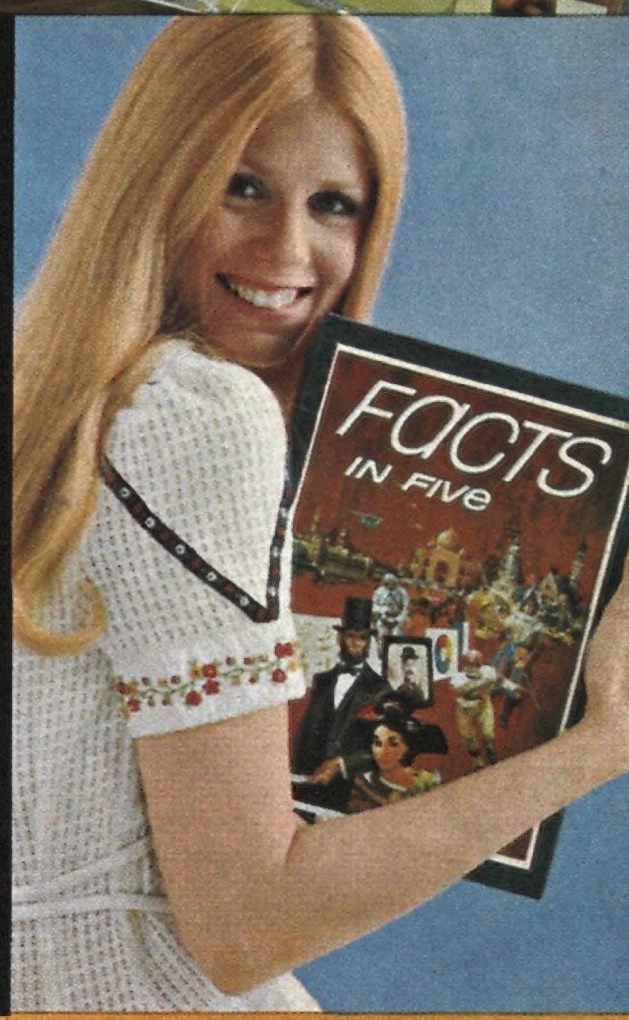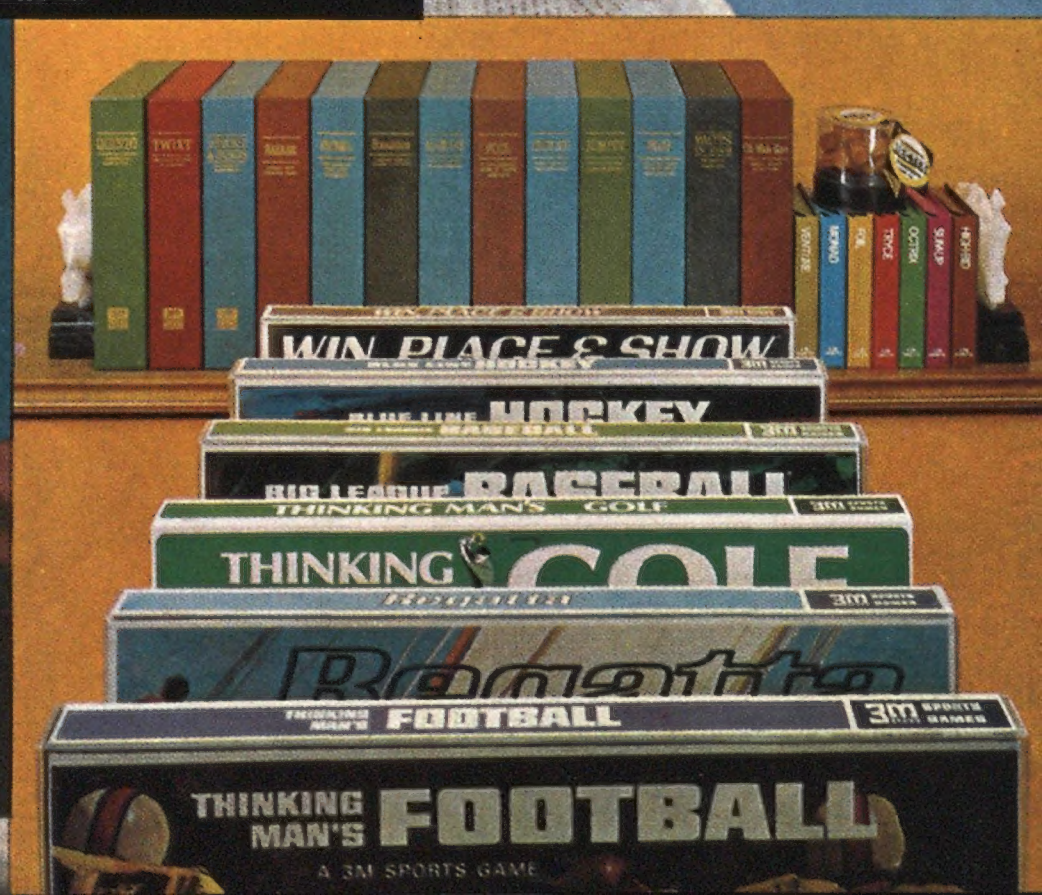
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